FEBRUARY 1, 1936

Railway Age

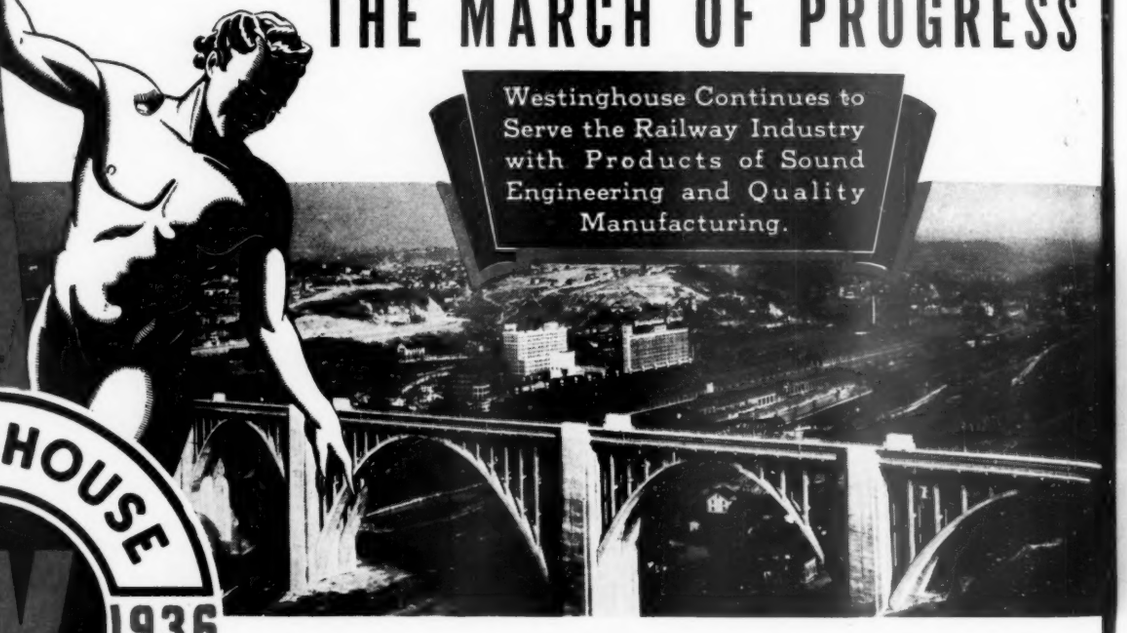
Founded in 1856

MILESTONES OF RAILWAY INDUSTRY

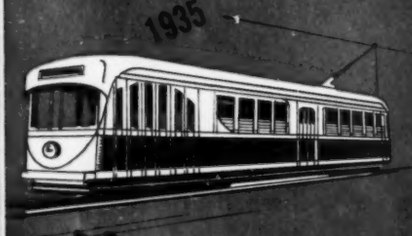
Leading

THE MARCH OF PROGRESS

Westinghouse Continues to Serve the Railway Industry with Products of Sound Engineering and Quality Manufacturing.



WESTINGHOUSE 1886 W 1936 GOLDEN JUBILEE



FOR FIFTY YEARS Westinghouse has been proud of its contributions to the Railway Industry. Some of the milestones are:

1891—Lamme No. 3 Railway Motor. The progenitor of present D-C. railway motors embodying the slotted armature, symmetrical 4-pole field, single-reduction gear and iron clad construction.

1892—The Rotary Converter—Changing A-C. to D-C. for street railway operation.

1902—The Single-phase, A-C. Traction Motor—permitting tractive efforts necessary for heavy traction equipment from A-C. overhead.

1906—The New York, New Haven and Hartford electrification, single-phase, 25-cycle.

★ ★ ★

1934-5—The Pennsylvania Railroad, New York-Washington electrification with motors of horsepower unbelievable a few years before and with weights per hp. one-half those previously obtained.

1935—The P.C.C. Car Equipment—involving remarkable design achievements in both motors and control—light weight—acceleration and deceleration rates heretofore unapproached, yet unbelievably smooth. A combination of electric, track and air-brakes.

1936—The new Single-motor Trolley Coach Equipment—assuring performance approximating that of the P.C.C. Car, but light, compact and with remarkable first cost savings. A vehicle with a faster "get-away" and accelerating and running speeds approaching or excelling that of any other railless vehicle operating on city streets. J 91100

★ ★ ★

Surely this record gives assurance of continued progress. Also to the Railway Industry, further economies and increased revenues—all to the end of increased patronage by a satisfied public and a prosperous Railway Industry.

WESTINGHOUSE

RAILWAY AGE

Do Labor Leaders Favor Collective Bargaining?

Do labor union leaders really favor collective bargaining? This will seem a strange question to most persons who think themselves familiar with the current activities and avowed policies of labor leaders. They sought government aid for coercing industry to accept and apply the collective bargaining provision of the National Industrial Recovery Act in accordance with their interpretation of it. NRA having been held unconstitutional, they secured passage of the Wagner Industrial Disputes Act creating a National Labor Relations Board to compel collective bargaining by all employers excepting railways, which are subject to the Railway Labor Act.

The Wagner Act declares it to be "the policy of the United States" to encourage "the practice and procedure of collective bargaining" "by protecting the exercise by workers of full freedom of association, self-organization and designation of representatives of their own choosing for the purpose of negotiating the terms and conditions of their employment." The support by labor leaders of this legislation, and the efforts being made by them to have it held constitutional, are naturally construed as proof that they favor collective bargaining by employers and representatives of labor unions as the means of determining fair wages and conditions of employment.

Requirements of the Railway Labor Act

But again we ask: Do labor union leaders really favor collective bargaining? We raise this question because of the course being followed by the railway labor union leaders. The Railway Labor Act went into effect in 1926 and was amended into its present form on June 21, 1934. It has for ten years required the railways to bargain collectively with their employees. It states that among its purposes are "to provide for the complete independence of carriers and of employees in the manner of self-organization to carry out the purposes of this act," and "to provide for the prompt and orderly settlement of all disputes concerning rates of pay, rules or working conditions." It requires that "all disputes between carriers and their employees shall be considered, and if possible decided, with all expedition in conferences between representatives designated and authorized so to confer." It provides also for mediation of disputes regarding the matters mentioned by a government board if they are not settled by conferences; for arbitration of disputes not settled by mediation; and for creation by the President of the United States of a commission to hold hearings and make a public report regarding any dispute that the parties refuse to arbitrate.

These are plainly provisions for collective bargaining in the first instance "concerning rates of pay, rules and working conditions." They were adopted by Congress originally as a result of agreement regarding them by committees representing the railways and the labor unions, and in their present form at the behest of the railway labor union leaders. Do the leaders of the railway labor unions act in accordance with their plain spirit, purpose and letter?

Why Do Railway Labor Leaders Seek Legislation Instead of Bargaining?

There are now pending in Congress three very important bills which the leaders of the railway labor unions drafted and got introduced. They provide for a six-hour working day at present wages for an eight-hour working day, for regulation of the number of men employed on trains, and for limitation of the length of trains. Each of these bills deals with "rates of pay" or "working conditions," or both. The bill for a six-hour day would reduce the standard working day 25 per cent and increase by 33⅓ per cent the hourly pay of each employee whose working hours were thus reduced. Its purpose is to force the railroads to employ more men and to increase their pay roll on the basis of present traffic about $600,000,000 a year, and on the basis of traffic in 1929 about $1,000,000,000 a year. The purpose of the train crew and train limit

bills also is to force the employment of more men and increase the pay roll.

If labor union leaders really believe in collective bargaining, why have the leaders of the railway labor unions not made demands upon the railways for a 6-hour working day at 8 hours pay, for increase in size of train crews and for limitation of the length of trains, and, if and when refused by them, followed through the process prescribed by the Railway Labor Act? The Railway Labor Act prescribes it as "the duty of all carriers, their officers, agents *and employees* to exert every reasonable effort to make and maintain agreements *concerning rates of pay, rules and working conditions.*" (Italics are ours.) It prescribes the way in which they shall perform this "duty." Obviously, by presenting to and pressing upon Congress demands for legislation radically to change wages and working conditions, without having first followed the process prescribed by the Railway Labor Act, the railway labor leaders disregard the provisions of this act which they got Congress to pass, and also the principle and practice of collective bargaining which the Wagner Industrial Disputes Act declares it to be "the policy of the United States" to "encourage."

Of What Value is Railway Labor Act?

Of what value is the Railway Labor Act as a means of determining wages and working conditions if the most important differences between the railways and their employees regarding wages and working conditions are to be determined by Congressional legislation without having been submitted to the process prescribed by the Railway Labor Act? And when labor unions thus disregard a law requiring collective bargaining between the railways and their employees that has been in effect for ten years, what reason have other industries for believing that, if they should accept the Wagner Act, the result would be the "friendly adjustment of industrial disputes arising out of differences as to wages, hours or other working conditions" which the Wagner Act declares to be its objective? The examples given of legislation being sought by the railway labor unions in disregard of the provisions of the Railway Labor Act are but a few of many of the same kind that could be cited. While ostensibly standing for the principle and practice of collective bargaining, they constantly seek legislation affecting working conditions in every state in the union.

A situation under which the railways constantly accept collective bargaining, while the labor unions, the principal advocates of it, repudiate it on a wholesale scale, does not make sense. The railways should demand that either they shall be freed from the Railway Labor Act or the labor unions shall cease disregarding it in every instance in which the labor unions do not consider it to their advantage to comply with it. And Congress should have something to say about the matter, also. When railway labor leaders ask it to pass legislation radically to change wages and working conditions, Congress should ask them why, before coming to it, they do not resort to the law it passed especially at their behest to provide, in the language of the law itself, a means "for the prompt and orderly settlement" of such matters. Congress has no means of determining their merits and settling them in an orderly and intelligent way. And this is why the labor leaders resort to Congress. They know their demands have no merit—that they are making them in an effort to exploit the railways, and through them the public; and that, the demands being devoid of merit, they have some chance of applying enough political pressure to get Congress to legislate them into effect, but no chance whatever of getting them granted by the railways or upheld by an arbitration board or a President's commission.

An Example for Other Industries and the Public

Collective bargaining between the railways and the labor unions is at present a fraud and sham, because it is not now practiced to settle the most important issues that arise. The Railway Labor Act ought to be either repealed or carried out. And industry should resist to the limit application to it of the Wagner Industrial Disputes Act as long as the railway labor unions continue to stultify all union labor by repudiating the Railway Labor Act. Collective bargaining and arbitration with labor unions may or may not be desirable in the public interest; but it is clearly not in the public interest for them to be practised only when labor unions can gain by them and to be avoided when they will lose by them. The members of labor unions are only a small part of the population, but the entire population has to pay, in prices and freight rates, the labor costs of industrial production and of transportation. Members of labor unions may consider it to their interest to make working hours as short and hourly wages as high in industry and transportation as possible; but this plainly tends to make industrial prices and freight rates exorbitant, and therefore plainly is not in the interest of the at least 60 per cent of the population that indirectly pays, but does not receive, high wages in industry and transportation.

When labor union leaders show a real willingness to use the means prescribed by the Railway Labor Act to determine wages and working conditions on the railways fair to all concerned, they will be in a much stronger position to convince the public that they really favor means of fairly determining similar matters in other industries.

Indexes to Volume 99

The indexes to the latest volume of the *Railway Age*, July to December, 1935, are now ready for distribution and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, *Railway Age*, 30 Church Street, New

York. Subscribers who have in previous years made application for the index need not apply again; they will continue to receive it as long as they continue to subscribe.

French Railways Simplify Passenger Rate Structure

The French railways (according to Revue Générale des Chemins de Fer) in order more effectively to exploit their passenger services, have simplified the rate structure (each type of reduced rate being at a fixed percentage of full fare). Complexities in rates having been eliminated, the railways are carrying on a campaign of education to acquaint the public with their bargain rate structure—a measure which was impossible as long as reduced rates were variously determined.

The base rate per kilometer is 45 centimes (2.97 cents), first class; 30 centimes (1.98 cents), second class; and 20 centimes (1.32 cents), third class. It will be noted that the rate for each of the higher classes

	Francs per 100 Kilometers			Equivalent Dollars* per 100 miles		
	1st Class	2d Class	3d Class	1st Class	2d Class	3d Class
One-way tickets	45.00 fr.	30.00 fr.	20.00 fr.	$4.78	$3.19	$2.12
Round-trip tickets	33.75 fr.	24.00 fr.	16.00 fr.	3.58	2.55	1.70
Week-end tickets	from 22.50 fr. to 27.00 fr.	from 15.00 fr. to 18.00 fr.	from 10.00 fr. to 12.00 fr.	from 2.39 to 2.87	from 1.59 to 1.91	from 1.06 to 1.27
Group tickets	22.00 fr.	15.00 fr.	10.00 fr.	2.39	1.59	1.06
Family tickets:						
First 2 persons	45.00 fr.	30.00 fr.	20.00 fr.	4.78	3.19	2.12
Each additional adult	11.25 fr.	7.50 fr.	5.00 fr.	1.19	.80	.53
Each child 3 to 7 years	5.625 fr.	3.75 fr.	2.50 fr.	.60	.40	.27
With a "Half Fare" Card	22.50 fr.	15.00 fr.	10.00 fr.	2.39	1.59	1.06

* Franc taken at 6.6 cents. These rates appear abnormally high when expressed in dollars and cents because France is still on the gold standard. If the U. S. had not devalued the dollar, these rates in U. S. currency would be approximately 40% less than the figures shown in this table.

is just 50 per cent greater than that of the next lower class—a characteristic easy way of public comprehension. Children from 3 to 7 pay half fare. Round-trip tickets, first class, are sold at a reduction of 25 per cent under the double fare and at a reduction of 20 per cent, second and third class. Week-end tickets are 40 per cent or 50 per cent under basic rates, depending upon distance. Parties of 10 or more travel at half fare. In family groups the first two persons pay full fare and additional persons only 25 per cent of full fare (children of 3 to 7, 12½ per cent of the basic rate). Tickets for excursion trains are sold at a reduction of 60 per cent from basic fares. A "half-rate card" is offered at prices depending on distance which enables a passenger journeying frequently over the same route to enjoy greatly reduced rates.

There are other reduced rates, but the ones mentioned are the principal ones. As a part of the joint program to make the public familiar with railway travel bargains, an attractive "Passenger Guide" has been issued which sets forth all the rates and the relationships between them. One page is headed "How much does 100 kilometers cost?", and the information in the accompanying table is given (which we have supplemented by showing the same information in dollars per 100 miles).

The traffic departments, so says the Revue, are no longer satisfied merely with taking the traffic which comes to them. They are out to create new business. Every aspect of the situation is under scrutiny, to detect and remove weaknesses—of which needless complexity of tariffs was one. Moreover, the service is being supported by intense publicity by means of newspaper advertising, handbills, posters, addresses and films. "One poster of winter sports in France," says the Revue, "actually brings to life on the walls of Paris the appeal of the snows of France."

In addition the railways have recently started a periodical which is circulated in ticket offices and among travel agents (to whom, presumably, the railways pay commission), giving all current information as to rates, seasonal tourist attractions and improvements in service. The December number of this publication was devoted particularly to winter sports and contained articles on group rates; railway facilities for winter vacations (including special rates); a list of the leading resorts for winter sports, classified by regions and setting forth how they may be reached by train; a list of the posters and booklets published by the railways dealing with winter sports; and events of interest to tourists scheduled for the winter months.

Joint merchandising of passenger rates and service, thus, has apparently made great progress in France. The "Passenger Guide" book, setting forth rates and services of all the railways, would appear to be a particularly worth-while effort, because bargains are of little effect unless prospective patrons know about them. Such a booklet would also be an advantage in merchandising passenger service to the American public—but the first step needed is a rational basis for reduced rates which the layman can memorize without difficulty. With basic rates in the three territories of the United States differing so widely, and with reduced rates being formulated in a heterogeneous manner, and varying not only by districts but from road to road even in the same district, obviously the American railways could not hope to instruct the public in the computation of bargain rates for the railways as a whole.

A simplified rate basis once impressed on the public's mind, permits the prospective passenger to compute his own bargains, and to "sell" himself on a railway journey. Publicity for such rates does not sell one trip only, but makes the one-time customer a perennial prospect even in the absence of further sales effort by the railways.

Rock Movement in Stephens Creek Was Stopped Above the Uppermost Spillway, as Evidenced in This View Taken on July 9—Break in the Earth Dam at This Point Can Be Seen on the Left

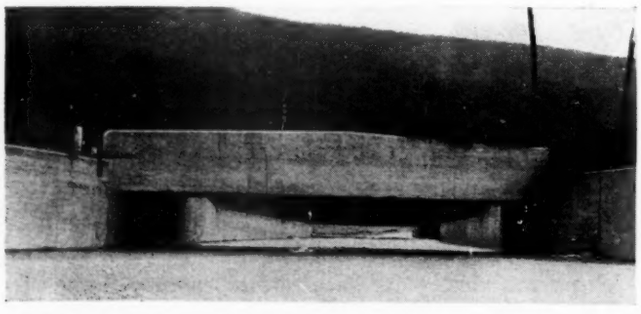
Severe Erosion in Lateral Streams Checked by the Erie

Flattened grades and timber spillways stop deluge of silt and gravel which formerly inundated the railway

THE record floods which visited the southern tier counties of New York state early last July showed the flow-retard works of the Erie in a number of troublesome lateral streams to be highly effective against erosion, which, formerly, under much less severe conditions, had subjected the railway to large expense for clearing bridge openings and for repairing damaged and fouled tracks. That these floods would have involved serious washouts and the covering of long sections of track with rock and debris if it had not been for the major flow-control work done from 1928 to 1931, inclusive, is self-evident in view of the damage caused repeatedly in earlier years by floods of much less intensity.

Erosion a Severe Problem

In lower New York state, especially between Hornell and Corning, a distance of about 40 miles, the Erie has long been troubled by about 10 lateral streams, which, while ordinarily tranquil and frequently dry during periods in the summer, become raging torrents during the spring freshets or after heavy or prolonged storms. The difficulty was not merely the matter of taking care of a deluge of water beneath the bridges carrying the tracks, which generally afforded openings of limited area, but of greater concern, the disposal of large quantities of gravel, broken rock, silt and debris carried down by the water, which not only filled the bridge openings, but which, at times, was carried up over the railroad embankment, fouling the tracks and blocking traffic.



Looking South Through the Concrete Flume in Stephens Creek, Shortly After the Storm, Showing How, for the Most Part, It Was Swept Free of Debris by the Force of the Water-Highway Bridge in the Foreground, Railroad Bridge in the Distance

Steam shovels and draglines had been used repeatedly for many years to remove the deposited material and to restore the stream beds after heavy storms. The material removed was usually piled up along the sides of the streams. To some extent the high banks thus formed tended to confine the flow of the streams to definite channels as they approached the railroad, but the handling of the material was costly and promised to become even more so as available space for disposal became more removed from the channels.

In 1928 the Erie began to seek permanent relief from the trouble experienced in these streams, and carried the work forward until 1932. In the measures taken, the principal aim was to produce non-eroding flow in the streams, even at flood stages. This was done by clearing and widening the channels and by the construction of check dams, or spillways, across the streams to reduce their hydraulic gradient. Two of the larger streams treated in this manner were Stephens and Cunningham creeks, the former about a mile east of Canisteo, N. Y., and the latter about a mile west of the town. The relief measures taken in these two streams, both of which empty into the Canisteo river shortly after crossing the Erie's main tracks, were described in detail in the *Railway Age* of September 3, 1932.

Seven Check Dams in Stephens Creek

Stephens creek is about five miles long and has a drainage area of approximately 7¼ sq. mi. From rainfall records, the flow in the creek at flood stage was computed to be between 2,500 and 2,800 cu. ft. per sec. Study of the creek bottom and the material

Cunningham Creek in the Vicinity of Spillway No. 3 After the Storm—Note Spillway Is Completely Covered With Rock. Only the Top of the Anchor Crib Is Seen

which had been moved by earlier storms led to the conclusion that a maximum mean velocity of 8 ft. per sec., which would produce side and bottom velocities of only about 6 ft. per sec., would eliminate serious erosion. Using this figure with the larger calculated volume of flow, it was determined that the creek slope, which varied from about 1 to 5 per cent, would have to be reduced to 0.5 per cent and the channel widened to 65 ft. for a considerable distance up stream from the railroad.

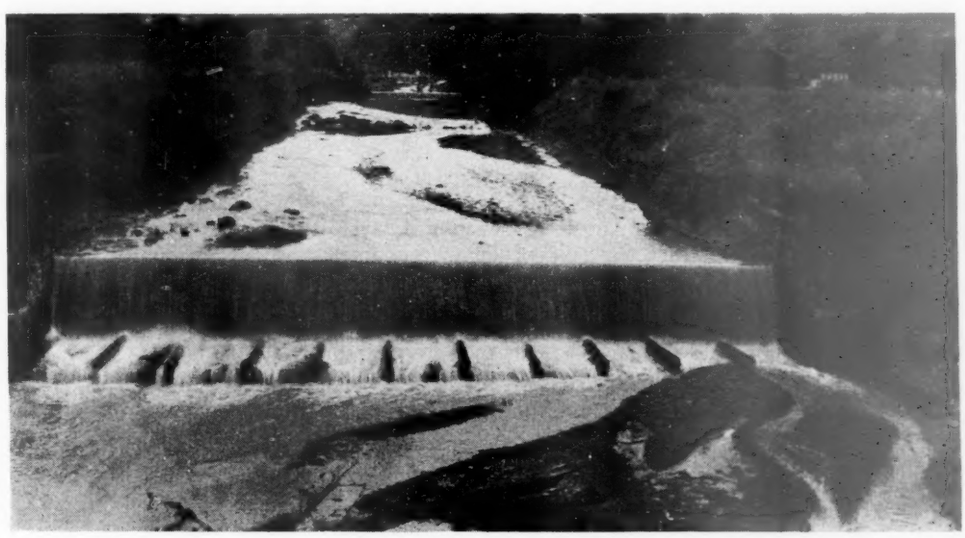
To effect the reduction of the channel slope, an earth dam and a timber spillway was constructed in the stream 3,200 ft. up stream from the railroad, and six other timber spillways, or check dams, were provided at points further down stream. The earth dam and the uppermost spillway lie practically in a straight line, the dam being 220 ft. long and from 5 to 10 ft. high, and the spillway, 85 ft. long and approximately 10 ft. high. These structures were designed not alone to direct the water to the proper channel during flood stage, but also to produce a large area of slow-moving back-water behind them, which, during flood stage would check eroded material brought down from above.

Below the earth dam and upper spillway, the old channel was widened to 65 ft. and the six other timber check dams were constructed, these latter spillways being from five to six feet high and located from 300 to 550 ft. apart, depending upon the natural fall in the stream. The check dams, which were constructed from timber cut in the vicinity, did not increase the height of the water in the stream appreciably at any point, since they were set down in the bed of the stream and the new 0.5 per cent slope was formed by excavating the old channel below them. Thus, the old steep channel upstream from the railroad was converted into a series of seven steps, with relatively flat slopes between the steps.

Concrete Flume Provided Beneath Tracks

From a point approximately 350 ft. up stream from the railroad, the old creek bed toward the railroad was on a slope of only about 0.7 per cent, a slope which greatly retarded the rate of flow of water from above. This permitted the settling in this area of a large part of the silt and rock which was brought down during high water. The material deposited, which amounted to thousands of tons annually, not only frequently blocked the railroad bridge opening, which was 48 ft. wide and from 2 to 4 ft. high, but at times was carried up onto the tracks and the right-of-way to a depth of 3 to 4 ft.

Since it was impracticable to raise the tracks through the affected area to provide increased clearance beneath the bridge, and undesirable from an economic standpoint to renew the bridge with one of greater span to provide an increased width of opening, a plan was adopted to accelerate the flow of water in this normally flat section of the stream to the point where the existing opening would be adequate and the velocity would not permit the debris to settle in the vicinity of the railroad. In this plan, a concrete flume was constructed in the channel from a point 357 ft. above the railroad to a point 170 ft. below. A uniform slope of 2.28 per cent was provided in the flume to a point well below the railroad bridge. This slope was calculated to produce a maximum mean velocity of flow in excess of 20 ft. per sec., which would be sufficient to carry even the heaviest materials brought down by the water. Below the lower end of the flume the old meandering channel across flats several hundred feet to the Canisteo river was aban-



Picture of the Lowest Spillway in Cunningham Creek Taken on July 9 from the Railroad Bridge, Showing How All Except Floating Debris and Fine Silt Was Stopped Upstream From the Railroad

doned, and a new short-cut channel was built to an old mill race which empties into the river. This shortening of the channel made possible the increase in slope through the concrete flume.

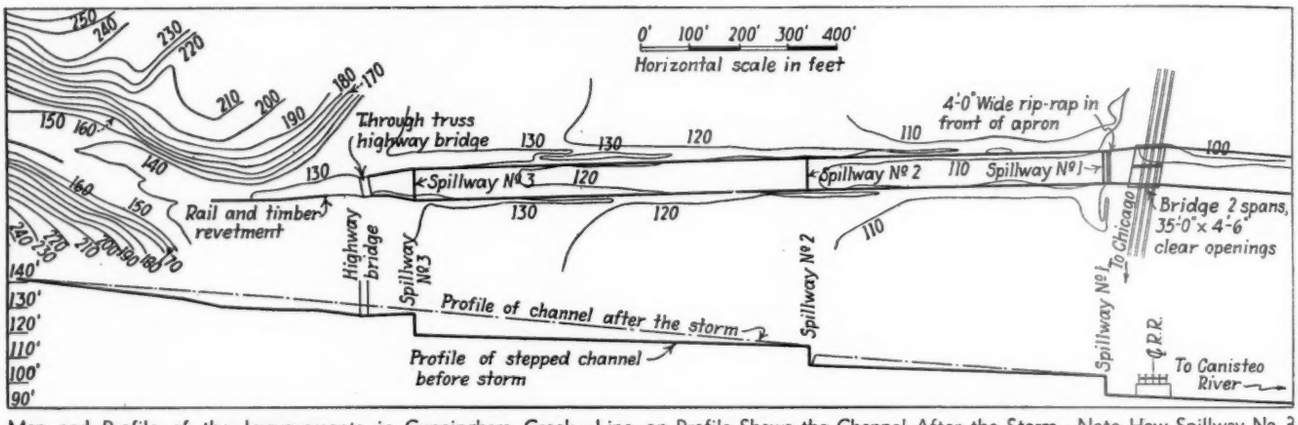
Three Check Dams in Cunningham Creek

At Cunningham creek, which drained an area of about 5.2 sq. mi., the problem was practically identical to that at Stephens creek. Therefore, similar corrective measures were applied to this creek. However, with the greatest trouble with erosion occurring within a distance of 1600 ft. upstream from the railroad, three check dams only were necessary to produce the desired channel slope. The construction of a new railroad bridge of larger span over the creek was necessary as here it was impracticable to increase the stream velocity by means of a flume or otherwise to a rate at which the old bridge opening would be adequate.

The three check dams constructed, which were of the same general type as those provided in Stephens creek, had a total height of 23 ft., two of them being 8 feet. high and one 7 ft. high. These dams were set down in the stream bed, as in Stephens creeks was a 2.23 in. maximum hourly precipitation and a storm of short duration. This figure was arrived at after a study of all available rainfall data in this territory for a period of 40 years. Following the storm of July 6 to 8, the indications were that both Stephens and Cunningham creeks had carried from two to three times the volume of water for which the improvements were designed. The crest at the spillways was 1½ to 2 ft. higher than the assumed "maximum" that might reasonably be expected on the basis of available stream flow records.

Rock Movement Stopped Far From Railroad

The striking fact developed by the storm was that, in spite of its exceptional severity, the flow and erosion retard works built by the railway were highly effective, and particularly so in Stephens and Cunningham creeks, where under former conditions the greatest damage would have been anticipated. In both of these streams, the movement of eroded material was checked far upstream from the railroad. As a result, the railway bridge openings remained clear, and, except for some minor wash of the track embankment, caused by the



Map and Profile of the Improvements in Cunningham Creek—Line on Profile Shows the Channel After the Storm—Note How Spillway No. 3 Was Completely Covered, While Rock Movement Was Completely Stopped Before Reaching the Railroad

creek, so as not to raise the height of the water, and the section of channel below each of them, in turn, was excavated to a gradient of approximately 0.6 per cent. At the same time, the channel was widened to 66 ft., which, in conjunction with the flattened slope, was calculated to produce a maximum mean velocity of 8 ft. per sec.

Record Storm Provided a Severe Test

From July 6 to 10 of last year the stream flow retard works in these creeks were subjected to a flood flow unparalleled within the records of the past 40 years, and which may not be repeated for many years in the future. Similar flood conditions prevailed in streams all over the lower central part of New York, which, as reported in the *Railway Age* of July 13 and 20, seriously damaged many miles of tracks on at least seven railways.

The floods were the direct result of heavy general rains on July 6 and 7, followed by cloudbursts during the late evening of the seventh and the early morning of the eighth. The precipitation was variously reported at from 5 to 14 in. over the area affected. In the vicinity of Canisteo and the two creeks discussed specifically in this article, the total precipitation is not definitely known, but record was made of the fact that 5½ in. of water fell within the 12-hour period from 9:30 p.m. on July 7, to 9:30 a.m. the following day.

The basis used in designing the improvements in the heavy flow, neither the bridges nor the tracks were damaged in any way.

The slack-water pool provided above the upper dam in Stephens creek functioned so thoroughly in settling out the heavier eroded material from the upper reaches of the stream that little or no rock was carried over even the uppermost check dam. The volume of water in this creek was so great, however, that it topped by as much as 12 in. the earth dam impounding the settling pool, the top of which is 24 in. above the flood stage for which it was designed. This, plus the fact that the swollen stream directly back of the dam had a heavy hydraulic gradient toward the spillway at its east end, caused quite severe erosion of the dam over its entire length, and actually caused a break through the dam for a distance of approximately 25 ft. near the spillway. This condition caused some flooding of the lower valley, without serious damage, but it proved helpful in relieving the regular channel and railway bridge opening of a large volume of water.

Even with this relief, the volume of water thrust upon the main channel between the earth dam and the railroad was so great that, in spite of the stepped and flattened grade provided through the check dams, the velocity of the water was sufficient to cause some erosion of the channel bed and side revetments, and some wash about the anchor cribs of the check dams, which, at the maximum stage, were completely inundated. Practically no

damage was done to any of the timber check dams themselves, and even that sustained by the anchor cribs was repaired by relatively little backfilling.

The rock and silt eroded from the bed and sides of the channel below the upper check dam were largely deposited in the concrete flume at a point below the railroad, this having been caused by the excessively high water in the Canisteo river which backed up into and retarded the flow in the lower end of the flume. The remainder of the flume maintained itself entirely free from rock or debris.

The amount of material retained in the lower end of the flume was only a small fraction of the former large deposits of rock and debris brought down, and, as a matter of fact, practically all of this material was swept clear of the flume by subsequent high water which, while non-eroding in the widened channel in the area of the check dams, built up sufficient velocity within the confines of the concrete flume to carry out most of the material left by the earlier storms.

Dams Function Effectively in Cunningham Creek

In Cunningham creek, which is in a narrower and more confining valley than that carrying Stephens creek, erosion was much more severe. Here, an estimated 16,000 cu. yd. of rock and gravel, brought down by the flood waters, was completely settled out above the railroad bridge in strict accordance with the theory involved in the check-dam, non-eroding-slope design employed.

When the heavily burdened flood water reached the upper end of the improvement in this creek, the increased width of channel and the lighter grade which had been provided so reduced the velocity of flow that the heavier water-borne materials were deposited. So great was this deposit that the upper check dam was completely buried. This process was repeated at the second or middle check dam, where practically all of the lighter materials were deposited. As a matter of fact, the eroded material was so completely deposited at the two upper dams that only a small amount of fine gravel, sand and silt was carried over the lowest check dam. As in Stephens creek, there was some wash of the check dam anchor cribs and of the gravel banks confining the stream through the improved area, but this was not serious and was corrected by a relatively small amount of backfilling and bank resloping work. Practically none of the eroded material reached the railroad bridge opening, which, unobstructed, carried the water without the former overflow of the tracks.

The most serious damage to the railroad's protective works in this creek was caused by the failure of a highway bridge just above the upper check dam. The opening at this bridge was entirely too small to take the flood waters. The highway embankment at each end of the bridge was cut through and one abutment was undermined, causing the bridge to settle and tilt. This deflected the current against the channel revetment just above the upper check dam and caused rather heavy erosion of the revetment and of the fill back of the east anchor crib.

A considerable amount of work has been necessary in these two larger streams; repairing the earth dam in Stephens creek, restoring bank slopes, backfilling washed anchor cribs, and removing rock and gravel deposited in the channels, but, in both creeks, it is felt that substantial amounts were saved by the protection afforded to the railroad, which was not damaged at either crossing.

The erosion control work in both Stephens and Cunningham creeks was carried out under the direction of George S. Fanning, chief engineer of the Erie, assisted in planning and design by L. S. Rose, estimating engineer. The original construction work, which was done under contract, was carried out under the direction of C. H. Splitstone, superintendent of construction. The repair work following the July storm was done with regular maintenance of way forces under J. C. Patterson, chief engineer maintenance of way, and I. H. Schram, engineer maintenance of way, Eastern district.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended January 18 totaled 611,408 cars, an increase of 48,582 cars, or 8.6 per cent as compared with the corresponding week of last year there was a reduction of 3,620 cars as compared with the total for the week before. All commodity classifications except merchandise and live stock showed increases as compared with last year but coal, live stock, ore, and coke showed decreases as compared with the week before. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, January 18

Districts	1936	1935	1934
Eastern	137,604	135,055	128,256
Allegheny	117,148	110,996	112,107
Pocahontas	45,356	40,373	39,829
Southern	92,805	85,115	87,481
Northwestern	71,826	62,720	64,649
Central Western	92,038	81,393	83,154
Southwestern	54,631	47,174	46,426
Total Western Districts	218,495	191,287	194,229
Total All Roads	611,408	562,826	561,902
Commodities			
Grain and Grain Products	34,715	25,189	32,188
Live Stock	13,933	14,963	18,046
Coal	140,740	137,448	129,016
Coke	8,661	7,806	8,347
Forest Products	28,380	20,754	19,680
Ore	6,066	3,836	3,202
Merchandise L.C.L.	149,016	151,822	160,526
Miscellaneous	229,897	201,008	190,897
January 18	611,408	562,826	561,902
January 11	615,028	553,518	557,266
January 4	541,984	497,274	500,813
December 28	.....	466,679	425,404
December 21	.....	599,534	548,478
Cumulative Total, 3 Weeks	1,768,420	1,613,618	1,619,981

Car Loading in Canada

Car loadings in Canada for the week ended January 18 totaled 40,082 cars, or 707 cars less than for the corresponding week in 1935 and 139 cars less than for the previous week, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
Jan. 18, 1936	40,082	21,785
Jan. 11, 1936	40,221	22,305
Jan. 4, 1936	34,458	20,244
Jan. 19, 1935	40,789	20,797
Cumulative Totals for Canada:		
Jan. 18, 1936	114,761	64,334
Jan. 19, 1935	115,496	60,548
Jan. 20, 1934	116,526	60,269

Railroads on Eve of Expansion in Passenger Business*

Low fares, advertising and fast trains will restore passenger traffic to the rails

By W. W. Colpitts
Coverdale & Colpitts, Consulting Engineers, New York City

TO me, and I think to most other students of the railroad problem, there is a far more important question facing railroad men today than the type of equipment; that question is—How are people to be attracted back to the rails? The question of the best type of equipment will be proven in due course and it may be that the best type for one road will be entirely unsuited for another. But every railroad employee should appreciate the peculiar importance at this time of making a concerted drive for passenger traffic. There never was a more propitious time than the present for doing this. Success in this matter will easily overcome any initial mistakes that may be made in determining exactly the best means of accomplishing this from the viewpoint of the mechanical or operating officer.

As we look back, I think it can be said that the competition of the automotive vehicle began to assume serious proportions about 1920, although that fact was not then realized, and anyone who, at that time, would have predicted the subsequent decline of railroad passenger traffic would have been regarded as a rank pessimist. Automotive competition has continued with unabated strength ever since. Its effect upon railroad passenger traffic may be judged from the fact that the passenger mileage declined from 47,000,000,000 in 1920 to 16,000,000,000 in 1933. It was 18,000,000,000 in 1934 and only about 2 per cent greater in 1935, despite the general improvement in business conditions. Broadly speaking, it can be said, therefore, that the passenger traffic on the railroads today is only about one-third the volume of 1920. This decline has occurred in the face of everything railroad managements have been able to do to stem the tide.

The greatest loss has occurred in local traffic, and as trains were withdrawn in the effort to reduce expenses, this only accentuated in the public mind the great convenience of the automobile which, in turn, resulted in still further loss of patronage. We have all been literally shocked at times to see our luxurious through trains running almost empty, and this situation had become noticeable well before the beginning of the depression. As each year passed, we were inclined to feel that the low point had been reached, but the downward trend continued.

Additional Traffic Greatest Need

It is apparent that the great need of the railroads at the present time, if their credit is to be preserved and private ownership survive, is additional traffic. It is greatly to be hoped that with returning prosperity, both freight and passenger business will increase substantially. At best, however, the freight traffic of the railroads as a whole is in tune with general business conditions throughout the country and, except within comparatively narrow bounds, cannot be expanded by reductions in rates, or even by improved service or the other means that are commonly employed in competitive rivalries between the lines.

I am fairly certain in my own mind that the railroads are on the eve of a large expansion in passenger business, providing certain things are done to encourage people to travel by rail; otherwise, I feel the decline will continue. What I want to do is to indicate some of the things I think ought to be done to retrieve passenger traffic from the highways.

In the first place, let me say that while the private automobile has drawn heavily from the railroads it has created travel-mindedness on the part of the public to an extent not even dreamed of 15 years ago. It would seem that Americans simply must be moving about to be happy, but for every mile they travel by train, they move many times farther by automobile. If automobiles were suddenly to be taken away from us, the railroads could not begin to supply the demand for transportation. That is to say, speaking quantitatively, there exists in this country today a demand for passenger transportation perhaps 20 times greater than that supplied by the railroads; or, stated in other words, if one-twentieth of the highway passenger traffic were diverted to the railroads, it would almost double their present passenger business.

In this respect, also, railroad passenger and freight traffic are in quite different categories. In the latter case, perhaps 15 per cent has been diverted to the highways, and this is so firmly held as to offer the greatest resistance to movement back to the rails. As a consequence, there is no great mountain of freight traffic not already moving by rail that the railroads may draw upon, as in the case of passenger traffic, except as it may be created by an improvement in general business conditions.

The point I want to emphasize in this connection is that passenger traffic in which the railroads do not participate has already been built up in this country in tremendous volume, the dimensions of which will undoubtedly broaden enormously as time goes on, and, to my mind, a part of it—at least large enough to be of greatest importance to the railroads — only awaits proper inducements to begin to flow toward the rails. For every 1 per cent of the highway travel impelled to use the rails, the present railroad passenger traffic would be increased 25 per cent.

Tremendous Market Awaits Development

A market is here now of tremendous size, awaiting only the inducements to lure it to the rails. There is also, I think, a growing appreciation by automobilists

*From an address before the Western Railway Club at Chicago, on January 20.

of the much greater safety of railroad travel, and of the fact that comforts and conveniences may be provided in railroad cars that are not possible in any other form of land transportation vehicle. It seems to me that a few signs are appearing of returning railroad-mindedness on the part of the public. Instead of taking a defeatist attitude, as many railroad men have done, that passenger traffic is a dead loss and is only a burden upon the freight that must be borne with patience and resignation, my own feeling is that the position is changing, and that there is now presented the greatest single opportunity in the field of transportation for profitable development if the whole subject is viewed from the standpoint of a large scale operation. A substantial increase in the passenger business of the railroads, such as I am talking about, is not going to come of itself. It must, I think, be the result of more or less radical measures, a hint of which we have in the attitude that a few railroads already have assumed toward the problem.

Three Measures Will Be Effective

If, in my capacity as an unofficial observer of railroad matters, I were to undertake to enumerate in the order of their importance the principal measures I believe will be effective in restoring passenger traffic to the rails, I would set them down as follows:

First—Reductions in passenger fares. On this subject, there is already a great deal of data as a result of fare reductions in the West and the South. I believe it is generally felt that these data are to a considerable extent inconclusive in respect of the gain in net revenue resulting from the reductions. My own view is that fare reductions, while of primary importance in themselves in increasing passenger traffic, to be most effective should be inaugurated in connection with other means for popularizing railroad travel. I believe also that accretions of traffic that may be expected to flow from fare reductions and other inducements to travel by rail should be visualized in much larger terms than are generally thought of, and that plans for enticing highway traffic to the rails should be prepared on a correspondingly large scale.

To my way of thinking, the subject that is uppermost in the minds of the great mass of people in contemplating a journey is cost. Convenience is, of course, a major factor and must be reckoned with, but to most people cost is dominating. And the measure of cost in most general use is that of operating an automobile. When we compare railroad fares with the full cost of running an average automobile—including depreciation, insurance, taxes and general upkeep—it is not difficult to show that even on this basis ordinary railroad fares in the East are quite out of line, but, as many students of the problem have felt for years, and as Mr. Turney points out most effectively in his report, the automobile owner does not figure it that way. He is more inclined to consider only the cost of the gasoline and oil he would consume on the trip, because he has to assume the other costs whether he makes the particular trip he is considering at the moment or not. We in the railroad business are naturally horrified at the thought of using such loose methods of accounting in determining costs. But the point is that, whatever we may think about it, the automobile owner bases his action on his own method of computing costs, and if the railroads would win his patronage they must look at costs through his glasses.

I would be inclined to say that railroad thought on this subject of reduced fares, more particularly in the East, has been bounded by too narrow limits of expectation of increase in traffic. We have only to go back to 1920 to an actual volume of railroad passenger traffic three times as large as it is today, and in the meantime travel by other means has developed a volume perhaps 20 times that handled by the railroads. Is it then an unreasonable expectation that, through a combination of reduced fares and other compelling means, railroad passenger traffic may be doubled or even trebled? I do not think it is.

Aggressive Advertising Necessary

The second measure in order of importance that I believe should be adopted in meeting highway competition is aggressive advertising, not by individual roads, but concerted action by all. You in the West have done something along this line but, if I had my way, I would broadcast persistently and in all parts of the country the fact that railroad trains afford the safest, the most reliable and comfortable and, if and when it becomes a fact, the cheapest means of travel. I would take the whole American public into my confidence in this matter, rather than those only who read the advertisements plastered about railroad stations, because, if these people were not already convinced of these things, they probably would not be in the stations at all. Railroad advertising often gives me the impression of a man talking to himself.

Consider the matter of safety. The measures taken by public bodies to reduce the number of automobile accidents, which last year took a toll of about 35,000 lives, and the publicity given these measures, have served to enlighten the people with respect to the hazards of highway travel, but they are not necessarily associated in the public mind with the much greater safety of travel by rail. It would seem to me that a direct comparison on a relative basis between highway and train travel should be given the widest possible publicity, especially stressing the fact that no passengers were killed on railroad trains in 1935. We, who are engaged in railroad work of one kind or another, are quite too much inclined to think that other people are as well informed on this subject as we are, and I am sometimes shocked in talking with people who travel by automobile exclusively, to find that they have quite forgotten the comforts and conveniences to be found on trains, and are wholly ignorant of the newer appliances for making travel by rail pleasant, entertaining and instructive. Since the advent of the automobile a new generation has grown up who have neither horse-and-buggy nor railroad traditions. The advantages to them of travel on the railroads must first be made quite real; then they must be told about it in ways that leave a lasting impression.

Contrary to the situation that must be met when railroads undertake to recapture freight traffic from the highways, there is no probability of organized resistance to a movement toward diverting passenger traffic to the rails through aggressive and extensive advertising, or any other means. The extent to which highway traffic may thus be reduced is relatively so small as not to reduce at all the number of automobile registrations, and to whatever extent such a program is successful, it will tend to lessen the hazards of travel on the highways.

Fast Trains Most Effective

We come now to the third measure for restoring railroad passenger business, which many railroad officers no doubt, and probably a great many others, would regard as the most effective; that is, the inauguration of fast trains.

No one can measure exactly the elements that combine to produce strong public reactions, but there is no doubt that for various reasons the streamlined fast train

has struck the public fancy as nothing else has in railroad transportation since the days when the rails of transcontinental lines met in the wilderness. There has been a feeling in the public mind for many years that the railroads have not made progress in catering to their patrons, as have other industries. Suddenly, out of a clear sky came a type of train, the like of which few men had visualized even in dreams. That this train created a sensation is a mild statement. In appearance, it differed so radically from the conventional type to which all our lives we had been accustomed that, along with its other attributes of beauty of line, high speed, light weight, and, in addition, combining every known modern appliance for adding to the safety, comfort, convenience and pleasure of passengers, it immediately captured the imagination of railroad men and the public alike.

The trains I refer to, of course, are the first Zephyr and the Union Pacific streamliner. I believe both the railroad world and the public generally owe the car builders a debt of gratitude for their brilliant conceptions, and the executive officers of these railways the thanks of the communities served by these trains on their respective railroads for their foresightedness and their willingness to break with precedent in introducing these trains. The railroads had waked up, but the Zephyrs and the Streamliners were by no means their only answer to the automobile. Other types soon began to make their appearance, some hauled by Diesels, others by steam locomotives, some operated experimentally, others in regular service on different roads throughout the country—the Rebel of the Gulf, Mobile & Northern; the Flying Yankee of the Boston & Maine-Maine Central; the Comet of the New York, New Haven & Hartford; the Streamliner-City of Portland of the Union Pacific; the Twin Zephyrs and the Mark Twain of the Burlington; the Hiawatha of the Chicago, Milwaukee, St. Paul & Pacific; the Royal Blue of the Baltimore & Ohio; and the Abraham Lincoln of the Alton. Other fast trains of conventional design have also been inaugurated, notably the "400" of the Chicago & North Western. They make an impressive list, but my own belief is that they are only a very small beginning. Other light-weight streamlined trains are being built for the Illinois Central and additional trains with sleepng cars for the Union Pacific and the Burlington.

Three pairs of these fast trains are operating in direct competition with each other between Chicago and the Twin Cities. Probably in no traffic channel in the country is a better opportunity afforded for measuring the public reaction to fast trains. At the same time, the conditions are perhaps less favorable here for the recovery of passenger traffic from the highways than between any other two large centers.

Public Response Remarkable

The volume of railroad passenger business in the country as a whole has declined over 60 per cent since 1920. In the western territory the decline has been about 70 per cent. In the area served by the three roads, the Burlington, the Milwaukee and the North Western, the decline (not counting the suburban traffic) amounted to about 70 per cent. The decline in the same period in the Chicago-Twin Cities channel (excluding suburban traffic) was only about 30 per cent. These relative percentages of decline show clearly that the railroads held their passenger traffic in the Chicago-Twin Cities channel much better than in western territory generally, or in the country as a whole. The opportunity, therefore, for regaining traffic in this channel is correspondingly much less favorable than might be expected in the other areas. It is due primarily to the exceptionally large number of high class trains operated between Chicago and the Twin Cities for a number of years.

In view of this fact, to me at least, the response on the part of the public to the introduction of these three fast trains is remarkable. There is plenty of visual evidence that the trains are exceedingly popular. This is confirmed not only by the record of ticket sales, but by the fact that passengers have been obliged at times to occupy seats in the diners and, in the case of the Twin Zephyrs, in the baggage compartment. Frequently, it has not been possible to accommodate all of the traffic offered. Somewhat inconclusive evidence of the measure of their popularity is imparted by a questionnaire which for a time was handed to each passenger on the Hiawathas and the Twin Zephyrs, and which indicated that about 27 per cent of the passengers would have traveled by highway or air if the fast trains had not been inaugurated.

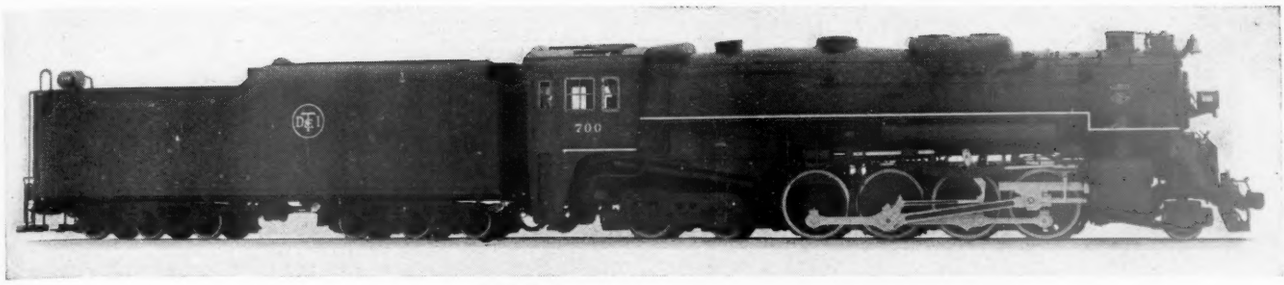
It would appear from such statistics as are available that each new train has induced a considerable volume of traffic to move by rail that would not otherwise have done so, and has diverted a much larger amount from the slower trains of its own line and, to some small extent, from the trains of other lines. It is my best judgment that the total amount retrieved from the highways and the air in the whole channel of traffic is approximately 35 per cent of the total movement on the fast trains.

In view of the fact that these three fast trains are wholly in addition to the service already established, which was more than adequate to meet the demands, and the further fact, as before stated, that the possibilities for retrieving passenger traffic in this channel have not been nearly so great as in other sections, it seems to me that the performance of these trains is nothing less than remarkable. Taking into consideration also the experience available elsewhere in the operation of fast trains, it clearly demonstrates their popularity with the traveling public.

When we view this whole subject in the light of the Chicago-Twin Cities operations, and particularly of the fast trains in this channel, several facts stand out as distinguishing these operations from the generality of railroad passenger traffic; firstly, the frequency of service which the lines had maintained even before the fast trains were inaugurated; secondly, the high quality of the equipment and accommodations in these trains; and thirdly, the low passenger fares. Each of these items has contributed toward sustaining the passenger traffic between these cities throughout the period of rapid decline throughout the country, and the ultra-superiority and speed of the fast trains has increased it.

Air-conditioning, better lighting and more comfortable coach seats are outstanding items in popularizing railroad travel, the latter, I think, much more than is generally realized. If high railroad officers would more often ride considerable distances in the ordinary coach I believe they would have a better understanding of the reason for the loss of local traffic. To my way of thinking, the greater comforts to be found in the coaches of our crack trains must, sooner or later, be extended to other trains.

A further item which I mention last, but which I think has very great potentialities for popularizing railroad travel, is the fact that the new lightweight, high-speed trains may be operated economically in small units and thus permit of greater frequency of service. To a large extent, the thing most desired by the local passenger is frequency of service but, like through passengers, he also wants safety and travel comforts, and lately he has expressed a distinct liking for speed.



Detroit, Toledo & Ironton 2-8-4 Type Freight Locomotive Built by Lima Locomotive Works, Inc.

Detroit, Toledo & Ironton Receives 2-8-4 Type Locomotives

Four main line freight locomotives built by Lima weigh 411,500 lb. and have a tractive force of 63,250 lb.

FOUR locomotives of the 2-8-4 type were delivered at the end of December to the Detroit, Toledo & Ironton by the Lima Locomotive Works, Inc. They will be operated on the main line in heavy freight service. These locomotives, the order for which was placed in September, are among the lighter locomotives of this type in point of capacity. Their weight on drivers of 248,600 lb. compares with a weight of 248,200 lb. of the first locomotive of this type which Lima turned out in 1925. The tractive force is 63,250 lb., which compares with 69,400 lb. for the earlier locomotive, while the total weight of 411,500 lb. compares with 385,000 lb. of the first locomotive of this type.

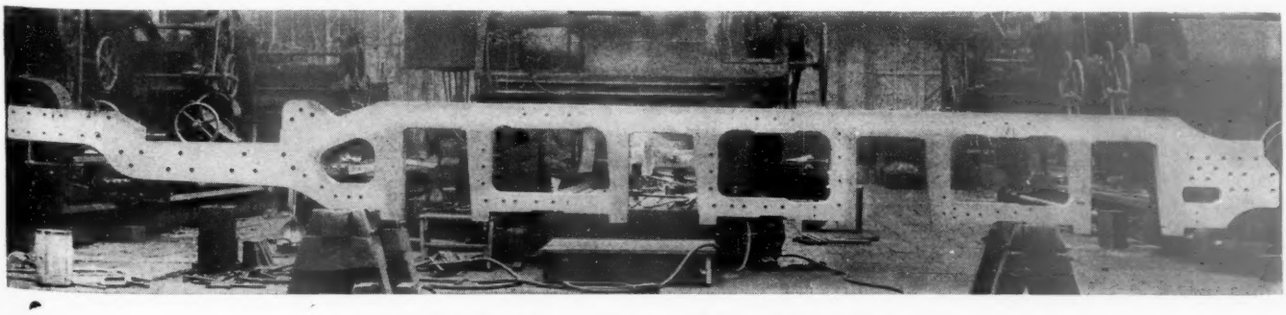
In the point of total evaporative heating surface the new locomotives are the smallest of any of the locomotives of this wheel arrangement which have so far been built, and in only one instance, the Atchison, Topeka & Santa Fe locomotive, was the superheating surface less. The total evaporative heating surface is 4,493 sq. ft. and the superheating surface, 1,795 sq. ft. The firebox has a grate area of 88.3 sq. ft. This also is less than on any other locomotive of the 2-8-4 type.

The outstanding feature of these locomotives is the frames. These have been cut out of rolled-steel slabs. The material used is a normalized and tempered carbon steel possessing a high degree of homogenity. This quality and the high physical properties of the material are indicated in the table. The location of each test piece included in this table is indicated on the frame diagram. From this it will be seen that test pieces were taken out of the metal removed from each pedestal, one near the top and one near the bottom, and one specimen from the metal removed below the front frame rail. The maximum variation in yield point is between 40,540 lb. and 45,180 lb., while the maximum variation in ultimate strength is between 71,800 and 79,940 lb., elongation being confined between 29.5 and 32 per cent and reduction in area between 53.3 and 56 per cent. The rolled-steel slab frame has been developed by the Lima Locomotive Works, Inc., working with the Carnegie-Illinois Steel Company.

Tests of Rolled Steel Frames—D. T. & I. 2-8-4 Type Locomotives

Test Identification	Yield point, lb. per sq. in.	Ultimate strength, lb. per sq. in.	Elongation, per cent	Reduced dimensions, per cent
11-T	44,640	78,940	30.0	54.7
11-AT	43,130	78,930	31.0	53.3
11-AB	44,180	79,430	29.5	53.3
11-BT	45,180	79,940	32.0	53.3
11-BB	43,730	79,780	30.0	53.3
11-CT	42,990	79,680	30.0	53.3
11-CB	43,980	78,240	31.0	54.7
11-DT	40,540	71,800	29.5	54.7
11-DB	42,230	73,340	31.0	56.0

Clearance restrictions limited the height of the stack



One of the Frames Cut from a Slab of Rolled Steel

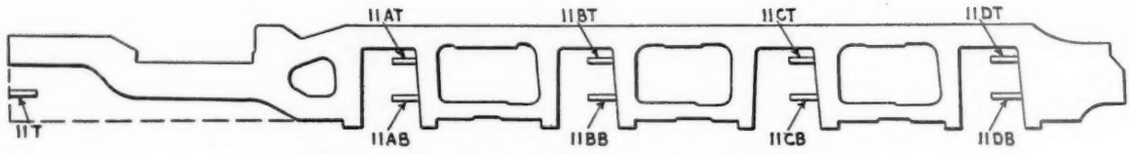


Diagram of the Frame Showing Location of Test Specimens

to 15 ft. 4 7/16 in. above the rail and the width overall to 10 ft. 9½ in.

The boiler, which is of the conical type, carries a steam pressure of 250 lb. The first shell course has an outside diameter of 88 in., the second course is conical, and the third or dome course has an outside diameter of 100 in. The design provides a generous steam space above the water level. The firebox, 132⅛ in. long and 96¼ in. wide, has a combustion chamber extending 27 in. forward of the throat. The Security brick arch is carried on five arch tubes. The shell contains 77 tubes, 2¼ in. in diameter, and 202 flues, 3½ in. in diameter, the length of the tubes and flues being 18 ft. 0 in. The grates are of the Firebar type and the fuel, soft coal, is fed by a Standard Type MB stoker.

General Dimensions and Weights of the Detroit, Toledo & Ironton 2-8-4 Type Locomotives

Railroad	D. T. & I.
Builder	Lima Loco. Works, Inc.
Type of locomotive	2-8-4
Road numbers	700-703
Date built	1935-1936
Service	Freight
Rated tractive force, engine, 85 per cent, lb.	63,250
Weights in working order, lb.:	
On drivers	248,600
On front truck	53,900
On trailing truck	109,000
Total engine	411,500
Tender, loaded	361,370
Wheel bases, ft. and in.:	
Driving	16-9
Engine, total	39-3
Engine and tender, total	86-1¼
Driving wheels, diameter outside tires, in.	63
Cylinders, number, diameter and stroke, in.	2—25 by 30
Valve gear, type	Walschaert
Valves, piston type, size, in.	14
Maximum travel, in.	8
Boiler:	
Steam pressure, lb.	250
Diameter, first ring, outside, in.	88
Firebox length, in.	132-⅛
Firebox width, in.	96¼
Combustion chamber, length, in.	27
Tubes, number and diameter, in.	77-2¼
Flues, number and diameter, in.	202-3½
Length over tube sheets, ft. and in.	18-0
Fuel	Soft coal
Stoker	Standard—MB
Grate area, sq. ft.	88.3
Heating surfaces, sq. ft.:	
Firebox and combustion chamber	318
Arch tubes	48
Firebox, total	366
Tubes and flues	4,127
Evaporative, total	4,493
Superheating (Type E)	1,795
Combined evaporative and superheating	6,288
Feedwater heater	Worthington—5SA
Tender:	
Style	Rectangular
Water capacity, U. S. gal.	22,000
Fuel capacity, tons	22
Trucks	6—Wheel Buckeye

The superheater is a Type E, and an American multiple-throttle is incorporated in the superheater header. The valves of the throttle have 1¾ in. lift. A Worthington feedwater heater, Type 5SA, is fitted.

The two cylinders, 25 in. in diameter by 30 in. stroke, are of the half-saddle type and spaced 92½ in. between centers. In addition to the usual bolting the cylinders are joined to the frames by welding and the bolted joint between the two cylinder castings is also reinforced by welding. The piston valves, which are actuated by a Walschaert gear, are 14 in. in diameter and have a maximum travel of 8 in. Care was taken to furnish large capacity live and exhaust steam passages. The distributing valves have a steam lap of 1 7/16 in. and a lead of 3/16 in. in full gear. No exhaust clearance is provided, the valves and ports being line and line. The reverse gear is an Alco Type G.

Crossheads and guides are of the multiple-bearing type. A Tandem main rod connects to the crack pin on the third pair of drivers with an extension to the rear drivers, and side rods connect the first and second pairs of drivers to the main crank pin.

The diameter of the driving wheels is 63 in. There is an Alco lateral cushioning device for the driving boxes on the front wheels which permits of a movement of ⅝ in. to each side of the center line.

The two-wheel front truck is a General Steel Castings constant-resistance design, having outside journals. The four-wheel trailing truck is of the Delta type. While a booster was not applied at the time the engines were built provision was made for a future application should this be desired.

The cab is of the vestibule type and has Lima comfort cab seats. The brake equipment is New York, schedule 6 ET, with two 8½ in. cross-compound air compressors located on the front deck. A Detroit mechanical lubricator, Model B, provides lubrication to the steam pipes, engine cylinders, front truck bearings, crosshead guides, steam cylinders of the air compressors and the hot-water pump. Other special equipment includes a Nathan low-water alarm and a Franklin radial buffer between the engine and tender.

The tender is of the rectangular type with a capacity for 22,000 gal. of water and 22 tons of coal. It is carried on Buckeye six-wheel trucks and weighs 361,370 lb. loaded.

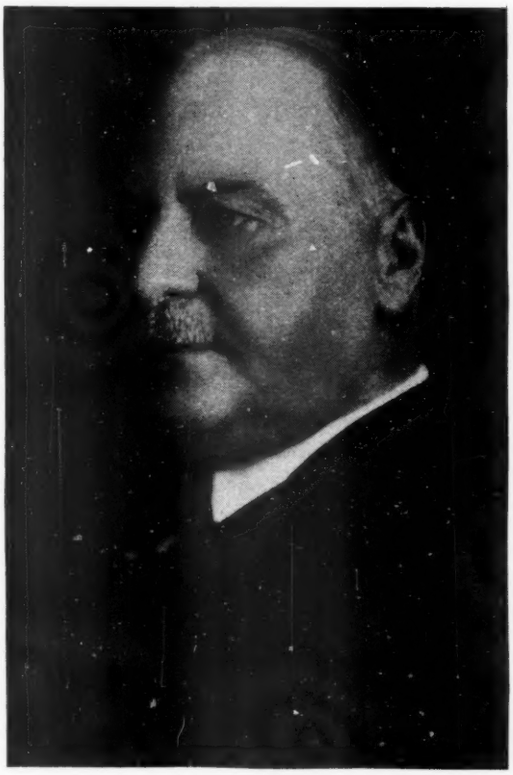
* * *

Electric Passenger Train Climbing a 2.8 Per Cent Grade into the Tavern Mountains, Austria

W. W. Salmon, President of General Railway Signal Company, Dies

Well known in railway equipment and supply industry, he had been chief executive of G. R. S. since its formation in 1904

WILMER W. SALMON, president and general manager of the General Railway Signal Company, died on January 23 at the Hotel Barclay, New York City, after an illness of about two months. He was 69 years old and had been chief executive of the G. R. S. since its formation in 1904.



Wilmer W. Salmon

Well-known in the railway equipment and supply industry, Mr. Salmon combined in a remarkable degree the qualities of an engineer with those of a successful business executive. He was not only responsible for the creation and growth of the General Railway Signal Company, but he was the guiding spirit in the development of electric interlocking now so widely used throughout the country. Furthermore, he personally conceived the idea of present-day single-track signaling, the "Absolute Permissive Block System" of which thousands of miles are in operation, and which is practically standard throughout the world as embodying the best in single-track signaling practice. Many of the detail devices and other products which the General Railway Signal Company now markets are due to his knowledge of railway problems—the fruit of life experience—which enabled him to visualize in advance the operating benefits which would accrue to the railroads from these inventions.

Mr. Salmon's skill as a business executive was manifest by the manner in which he guided his company through the difficult years of the depression. The company entered 1929 with a volume of unfilled orders having a dollar value 23.5 per cent in excess of that at the beginning of 1928. By the end of 1932 business had fallen off to such an extent that the company entered 1933 with a dollar value of unfilled orders equal only to 30.8 per cent of the average value of unfilled orders on hand on the same date in the 10-year period ended December 31, 1932. A turn came in 1934, and the dollar value of all orders booked was 4.18 times that of 1933, but the company had throughout the years of drastically declining revenues been able to maintain dividends on its preferred stock and also to make some payment each year on its common shares. On the latter $5 per share —the 1929 rate—was continued through 1931; in 1932 $1.50 was paid while the 1933 and 1934 disbursements were $1 in each year.

Meanwhile the company's current position remained unusually strong. The balance sheet for the year ending December 31, 1934, showed total current assets of $4,403,992 in which was included $1,298,648 in cash; total current liabilities were $217,545 or only slightly more than one-sixth the amount of cash on hand.

Wilmer Wesley Salmon was born at Townsend, Del., on December 4, 1866. He attended Dickinson College, Carlisle, Pa., and received an A.B. degree in 1886 and an A.M. degree in 1890. In 1886 he became a member of the engineering corps of the Pennsylvania Railroad, leaving there to enter the engineering corps of the Philadelphia & Reading in 1887 where he remained until 1890, by which time he had risen to the position of division engineer. He then went to the Chicago & North Western as assistant engineer, where his attention was first directed to signaling when that road was preparing to deal with the traffic incident to the Chicago World's Fair. In 1893 he left the Chicago & North Western to go to the Hall Signal Company as an engineer, serving with Hall until 1901 successively as sales manager, European representative and vice-president.

While with that company he was sent to Europe to interest foreign railways in signaling systems and during his stay abroad he designed and was responsible for the first subway signal system ever put in service, which system is today in operation on the Métropolitan (Underground) Railway of Paris. He also installed the first automatic block signal system in Europe on the Paris, Lyons & Mediterranean Railway of France, and made several similar installations on the Belgian railways. In 1901 he left the employ of the Hall Signal Company to become president and general manager of the Taylor Signal Company of Buffalo, N. Y., which was the pioneer in electric interlocking. In 1904 Taylor was merged with the Pneumatic Signal Company of Rochester, N. Y., to form the General Railway Signal Company. Mr. Salmon was president and general manager of the General from its formation until his death. He was one of the founders of the Railway Signaling Club which later became the Railway Signal Association and is now the Signal Section of the Association of American Railroads. Mr. Salmon was a member of the Western Society of Engineers, the United States Chamber of Commerce and a number of clubs.

Public Responsibility Toward Regulated Industry*

Where supervision involves heavy participation in management the question of assuming financial responsibility arises

By Dr. Lewis C. Sorrell
Professor of Transportation and Traffic, University of Chicago

THERE has been a good deal of discussion for many decades about the duty to the public of a regulated or a public-service industry. In this discussion I am reversing the proposition to consider what the duty of the public conceivably may be to a regulated industry. In doing so, of course, I do not ignore the other side of the question which has been discussed so much—that first duty of the industry to the public. We recognize that it exists, and railroad enterprises have been painfully conscious of it at least for many decades.

It is a common-place of transportation literature that those who devote their property and services to such public callings do so with the implied assumption that they owe duties to the public which transcend the duties to the public assumed by those who enter upon non-public callings. Out of these duties, and as a means of enforcing them, have developed numerous positive mandates that relate to the right to enter upon or withdraw from the calling, the prices that are to be charged for the services, the services that must be rendered whether profitable or not, and the methods of operation.

The strictness of railroad regulation is unquestioned. Probably a scheme of regulation generally starts with a few simple aims and builds up into a mountain of complexity. Often it proceeds so gradually that a generation or two are needed to show the change that has taken place. Beginning with protection of the public against a few generally recognized practices regarded as clearly against the public welfare, it proceeds gradually to other activities that are more remotely associated with the public interest. The objective of regulation tends to change; instead of remedies for acknowledged ills it becomes prevention perhaps of fancied ones; it is now said to be one of fostering care and development; and the elusive phrase public interest, nowhere clearly defined, and perhaps indefinable, is used as a cloak to protect interests that in truth appear to be private ones. If the carriers desire to maintain, increase or lower rates, the Interstate Commerce Commission within the law as it now stands may deny that privilege, not on the grounds that a serious public wrong may result, but because they disagree with the managements of the railroads concerning the effect of such proposal on the carriers themselves. Granting that any regulation to some degree invades the field of management, does not this type of regulation greatly invade the field of management?

I have in the last few years heard much condemnation of regulation because it invaded the field of management. Of course, every regulation to some degree interferes with managerial discretion. I recall that one very famous report and referendum of the United States Chamber of Commerce dealt quite extensively, so far as illustration was concerned, with this issue, but nowhere was the attempt made to define the regulation which properly may invade the field of management and the regulation that properly may not.

I do not imagine that I can state a doctrine that will be clearly acceptable to everyone, but I am simply putting forth, as warrantably receiving some thought, the question as to whether the clue to that discretion is not to be found in the regulation clearly necessary to protect the public against clearly established wrongs, and the regulation that, whatever its pretext, really amounts to a substitution of government official judgment for the judgment of the managers of the private enterprise.

Regulation Involves Extensive Participation in Management

If now, as seems patent, the public has entered upon a degree of regulation of railroads that is properly characterized as extensive participation in management, in exchange for the duty of the enterprise to submit to this, what enlarged duties has the public assumed toward the enterprise? It is difficult to find any substantial measure of responsibility on the part of the public and its several governments—state and federal—toward the railroad enterprises for the assumption of ever-widening spheres of regulation and participation in management. These same governments have not hesitated to impose upon the railroads regulations which have proved burdensome and costly—even threaten now to impose other regulations which may be much more costly than those heretofore imposed—and have manifested little or no concern over the question of whether or not the industry can bear such costs. Our economic institutions have generally proceeded upon the assumption that management and ownership should go together; and by thus tying up these two aspects of business enterprise better management in the long run is likely to eventuate. This assumption may be disputed, and indeed is disputed today by some critics of the business scheme. But as yet it is basic, and no entirely satisfactory substitute has been offered. Furthermore, it may be regarded as one of the reasonable expectations of investors who placed their funds in enterprise, that with that ownership should go the right to control the management thereof.

Should the government purchase the railroads outright, no one would probably question its right as owner to control the management of the carriers; but then it would be compelled also to accept the complete financial responsibility for their success and/or failure. Under the present scheme of extensive regulation amounting in substance to heavy participation in management, the government becomes in effect a partner without investment; and acquires the power to participate in management of such enterprises without incurring the financial responsibility that would necessarily attend outright government ownership of the carriers.

But somebody may argue: What about Section

* Abstract of an address delivered before the New York Railroad Club on January 17.

15A; what about the land grants which were given to the railroads; and what about the present RFC loans—don't they indicate that the Government has recognized responsibility toward the railroads? I think they do not.

Land-Grant Obligations Completely Extinguished

The land grants to the railroads were offered for a vastly different purpose; the purpose of promoting the settlement of the country, enriching the Government as land owner—proprietor, that is, and not merely as an aid to railroad enterprise. And furthermore, whatever was the obligation from those land grants, I hold it has been completely extinguished by the reduced rates which the railroads were compelled, in return, to offer to the government for government property and persons being transported.

As regards Section 15A, I think most anybody conversant with the financial situation since that 15A was passed, would be inclined to be very skeptical as to whether 15A had really offered the railroad investors anything substantial in its administration. And as regards the present RFC loans, they are of emergency character, rendered not only to railroads but to other enterprises than railroads, and not for the purpose primarily of aiding railroads but for the purpose primarily of preventing economic collapse.

Now, is it wide of the mark to suggest that policy of the public toward the railroads of this country during the last quarter of a century or so has been implicitly something like this:

We, the people of the United States, desire the continuance of private ownership and operation of the railroads; private owners are entitled to a fair return on their investments in railroads if they can secure it; nevertheless such private investors should take notice that we will regulate their business and participate in their management without much regard to the question whether our regulation will prevent them from earning a fair return.

If such an assumption were explicit, private investors doubtless would regard the prospect so uncertain as to warrant their refusal to invest. Let us take another viewpoint of this, the business organization viewpoint. Consider the case from the standpoint of sound organization. It is well recognized that one of the most important principles of organization is that *power to act* should be joined with *responsibility* for its exercise. Power divorced from a sense of responsibility is likely to be tyranny; responsibility without power is likely to produce impotence and injustice, and is demoralizing in organization. By responsibility I mean liability. There can be no responsibility without liability.

No Public Responsibility to Railway Owners

The public through its chosen officials, that is, Congress and the administrative commissions, assert and exercise the right to regulate the railroads to a degree that amounts to extensive participation in their management. The power to do this is conferred by the public, and not by the owners of the property. Where is the responsibility for their actions, so far as the owners of the properties are concerned? In a vague way administrative commissions are accountable to Congress; but practically what does this amount to? Does Congress review the acts of the ICC save for political content, and exact liability of such officials save on grounds and in cases that are usually questionable to say the least? In a vague way Congress is responsible to the public, but not for mismanagement of the railway properties. The owners of the railways cannot discharge government officials; there is no liability on the part of the public or its officials toward the railroad owners; hence their extensive participation in management becomes a case of the exercise of power without corresponding liability for the exercise thereof. Indeed, it is difficult to see how public responsibility to such regulated private enterprise could be secured without some financial liability on the part of the government toward the enterprise, the railroads.

If you think I am hinting at subsidy, I am more than that—I am stating it. It is not a palatable doctrine to announce, I know.

The Valuation Fiasco

Take the valuation illustration. There is a case. Think back what that has cost, and what it has amounted to. Back in 1913, and years before, valuation had been urged for what to the commission and others seemed to be good and sufficient reasons. The chief reason was to regulate rates, and perhaps a few other things, such as taxation. There was also some pressure from State taxing bodies for revaluation of the railways. The railroad people did not oppose it when the act went through. There was some very little question as to what it would cost. I don't like to rake up old tales now. Commissioner Meyer, who has just celebrated his twenty-fifth anniversary on the commission, made the statement before the American Economic Association in 1911 that at the outside valuation of the railroads would cost two and a half million dollars and could be done by a score of engineers in New York City in two years. I understand that when the act was before Congress the estimate was raised a little—to about three or four million dollars, and perhaps three or four years. In the summer of 1913 they again raised the estimate: That it would probably take five years and that it would cost the government perhaps seven million dollars.

I won't go into all the phases of that story, but to date it has cost the railroads one hundred and fifty millions, and it has cost the commission fifty million; and if we take 1933 as approximately marking the completion of bringing the first primary valuations down to date, it took 20 years, three times as long, and from three to five times as much money as the highest estimate. Furthermore, there was no serious consideration as to how the expense was to be divided between the railroads on the one hand and the government on the other. Now that we have it, what can it be used for? The primary purpose for which it was designed was to regulate railroad rates. And what case can be taken to the commission today involving the railroad rate levels, in which the valuations of the commission can be made a basis for any decision? Or is there any prospect in the future, of any use to which they can effectively be put, other than to say that the carriers are not, and have not, and probably will not, so far as one can see, have earnings on those valuations?

Lesson from Valuation Unlearned

There is the result: An act of regulation—shall we say imposed on the carriers largely against their will? But they co-operated, they co-operated with the commission, so far as I can see in good faith and carried it out. It cost them a good deal of money. If we could be assured that Congress and the public would not lightheartedly enter upon other regulations even more costly and with less consideration of the expense, we might say that the cost of valuation was worth the lesson it has taught. I fear the lesson has not been learned.

One further aspect of this case may be considered. The government has already imposed many restrictive regulations upon the railroads, that is, has indicated many

things that the carriers may not do in the management of their properties. It is quite conceivable that public policy may call for even more positive direction of railroad management than has heretofore obtained. Thus, it is quite possible that quite positive steps may be taken to effect more rapid consolidation of railroads, to insist upon more co-operation among the carriers, and to force financial reorganization. I do not say that these steps will be taken; but it is notorious that they have been contemplated and advocated by some. Such positive regulations would obviously interfere to an even greater degree with the rights of owners of these properties, and undoubtedly would inflict losses upon some. If now the present owners of the railroads are called upon to make further concessions to the public interest in these respects, what reciprocal duty will the public assume in return therefor? Is it equitable to ask the owners to make these concessions, and offer them nothing in return?

In a volume written some twelve years ago by Vanderblue and Burgess, on "Government and Railroads," in the discussion on consolidation appears this very interesting excerpt:

> . . . But the great underlying issue of public responsibility rather than of public right can be exposed. If the needs of the public call for consolidations which cannot voluntarily be effected under a system of private ownership, the responsibility of the public to the private owners can be met in one of two ways: by a guaranty of earnings, or by public ownership. It is idle to talk glibly about the rights of the public unless the public is willing to assume financial responsibility . . .

I am not endorsing all of the implications of the doctrine; I am not saying here to you that it necessarily does involve a financial return on the part of the government to the owners, if that is done. There may be some other way of handling that situation. I am simply endorsing this in emphasizing the public responsibility that goes along with the exercise of public rights.

Unequal Regulation Promotes Unfair Competition

Now, I shall turn briefly to a phase of the public duty of equality toward regulated industry, which has been most familiar during the last ten years, namely equality of treatment by the government of competing carriers. So much has been said on that subject, that not many aspects of the principle have been left unexplored, although the application thereof will require consideration for years to come. Fortunately for one reason or another there is more disposition to recognize this principle than was formerly the case.

While one cannot affirm a public duty to equalize conditions as between competitors, one can affirm that insofar as the regulation of the law itself deals unequally between private competitors, it is a violation of equity. The public and the government have sought for many generations to diminish the inequity in private competitive tactics; and it surely cannot be equitable for a government to do under the guise of regulation that which it forbids private interests to do, namely promote unfair competition. That regulation which bears heavily upon the one private interest, and lightly upon the competing one is a species of government abetted unfair competition is more clearly recognized today; and some progress has already been realized in the effort to correct it. But considerably more still remains to be done. And doubtless a long period of trial and error will ensure in the effort to secure effective laws and administer them effectively.

Of well nigh equal importance is the much debated issue of unequal treatment in the guise of subsidies to the several forms of transport. This controversy has raged for many years. It has really been most difficult to secure acceptance of the view that a heavy subsidy to one competitor and a refusal to assist another competitor of itself was a species of very unfair government abetted competition. Even among business men who clamor for no government entry into or interference with their business, there has been strong agitation for this form of government interference in or promotion of one form of transport at the expense of another. Local greed and selfishness have been very evident. It is to be hoped that the forthcoming report of the Federal Co-ordinator on the subject of subsidies to the several forms of transport will be sufficiently acceptable to the various interests involved, so that the major facts will no longer lie in the realm of debate. But it is certain that the issue of policy or what we resolve to do with those facts will be the basis of further and prolonged controversy.

And to complete the record in this case, reference should also be made to this case where the public itself becomes competitor. You will recognize that this is much involved today, and is likely to be even more involved in the future if the present trends toward what is termed a totalitarian state shall continue. The government enters a field formerly left to private enterprise, whether regulated or unregulated. Though the reaction of the private enterprise is generally hostile to such action by the government, it may not be easy to give a convincing reason why the government should entirely keep out of fields heretofore allotted to private effort. There may be good reasons why they should not do so in a given industry, and possibly good reasons for such intervention in another. The crux of the difficulty lies in the character of the competition between private and publicly owned enterprise.

Competing Against the Public Purse

If private enterprise must stand entirely on its own feet, depend entirely on its own efforts for success or failure; and if public enterprise can in case of need fall back on the public purse, it is only too apparent that another instance of unfair competition obtains. It is highly questionable whether publicly owned and privately owned enterprises can exist economically in the same field, so strong is the pressure for uneconomic management of the public enterprise. Therefore, even if one cannot affirm generally that it is the duty of the government to stay out of those fields of activity heretofore belonging to private enterprise, it is possible to affirm that the same standards of management and conduct should obtain for both if competition is to survive.

If this argument has been followed to this point, it may prove of some assistance to present it in a series of propositions.

(1) The public duty toward a regulated industry should be measured somewhat by the degree to which it undertakes strictly to regulate that industry.

(2) Where such regulation virtually amounts to a heavy participation in management of such private enterprise, it should be carefully considered whether the public should not in some way assume financial responsibility toward that industry for the results of its participation in management. It is not equitable that even a government should have power without responsibility toward those affected. The divine right of kings did not descend to democratic governments; and despite the Messianic fervor of Mr. Roosevelt, the ethical superiority of politicians to business men remains to be proved and established, if it can be.

(3) It is part of the duty of the public toward regulated industry to so determine and administer its public

(*Continued on page 222*)

Scrap Buyers' Figures Set Goals for Railroad Costs

Regard talk of steel head as sign of better relations with mills—Railroad and truck hauling compared

ADDITIONAL facts on the controversial subject of handling scrap iron and steel and new light on the competition of highway trucks with railroads for the country were made available to the railroads last week in Chicago when costs and methods of processing scrap in yards of 50 dealers, including large buyers of railroad scrap, were summarized at the annual convention of the Institute of Scrap Iron and Steel.

Scrap is now furnishing more than half of the metal used in manufacturing new steel in this country; and the United States, by producing half the scrap moving in export, has become its largest exporter, it was disclosed. This and other aspects of the scrap iron and steel business have induced the government, according to R. J. Lund, U. S. Bureau of Mines, who addressed the convention, to begin compiling detailed statistics of scrap iron and steel consumption.

$1.88 Per Ton for Handling

Over-all figures gathered by the institute embrace all expenses incident to the operation of scrap yards, including the cost of trucking and overhead; but they are divided to show for eight districts the cost of handling and sorting, separated from trucking and plant overhead expenses in different yards and the further differences in yard costs where considerable tonnage is delivered to yards by sellers free of charge, as in some metropolitan areas, or is hauled by railroads or hired trucks and the cost regarded as transportation instead of plant expense. The costs were presented with the explanation that most of the tabulations were carefully prepared and showed the use of intelligent cost systems.

Based on approximately 50 returns, the average cost of trucking, hauling and preparing a ton of scrap, including plant overhead, was $3.89 per gross ton in 1935. An analysis of the costs by districts is given in the following table.

Analysis of Scrap Costs by Districts

District	Cost of trucking	Cost of handling & preparing	Overhead cost	Total cost
New England	$1.30	$1.87	$0.41	$3.58
Middle Atlantic	1.07	1.45	.92	3.44
South Atlantic and Gulf	1.50	1.85	1.25	4.59
Pittsburgh and Valley	1.25	1.89	.81	3.94
Detroit and Cleveland	1.25	2.46	.58	4.29
Chicago, Duluth and Northwestern	.75	1.44	.56	2.75
St. Louis and Kansas City	.80	2.40	.46	3.66
Pacific Coast	1.62	1.75	1.50	4.87

The trucking costs for material received and shipped by dealers' trucks consist of drivers' and helpers' wages, truck hire, automobile operating expenses, and insurance and depreciation on automobiles. The preparation cost consists of wages, repairs, supplies, power, oxygen, acetylene, maintenance, compensation insurance, and insurance and depreciation on machinery and equipment used on the material handled in the yards. The overhead expenses consist of office salaries, travel, advertising, telephone, stationery, association dues and subscriptions, heat, professional fees, watchman, general insurance, taxes, rent, depreciation and bad debts.

Much Hauling by Truck

Variations in the average costs in different districts, as shown by the reports of 50 companies, are further explained and the extent to which the railroads are confronted with truck competition in moving the commercial tonnage produced in the country are indicated by other figures developed by the institute to show the relative amount of different grades of scrap handled in each district and the proportion of the total incoming and outgoing tonnages which were removed by railroads and by trucks. Scrap not actually handled at yards, as where shipments are made direct from railroads to consumers, is not included in the figures. The figures show that the railroads handle 31 per cent of the incoming scrap and trucks 55 per cent, and that the railroads handle 77 per cent of the outgoing scrap and trucks 15 per cent.

Analysis of Scrap and Transportation

District	No. 1 steel scrap, %	No. 2 steel scrap, %	Cast iron scrap, %	Incoming scrap by railroads, %	Incoming scrap by trucks, %	Outgoing scrap by railroads, %	Outgoing scrap by trucks, %
New England	27	32	25	7	75	50	10
Middle Atlantic	36	21	33	13	58	32	53
South Atlantic	25	55	16	45	39	82	12
Pittsburgh	42	23	18	29	68	96	4
Detroit	44	25	16	15	66	79	15
Chicago	40	34	22	43	39	96	4
St. Louis	50	30	15	75	16	92	8
Pacific Coast	35	53	12	17	81	85	15

It was pointed out that the sales of one company are subject to deduction of $0.105 per ton for waste and dirt found in the incoming scrap. It was also brought out that some scrap dealers who own their own trucks have found it necessary to base depreciation on a four-year life.

Speaking for the steel industry, W. S. Tower, executive secretary of the American Iron & Steel Institute, stated that the scrap dealer contributes to the economies of production and must be considered by the steel maker as having possible important effects on his finished products. Hand-in-hand with the changes in the method of manufacturing steel, he said, has come the constantly growing demand for scrap; and pig iron is now providing only a little more than half of the metal in the total production of steel. He added, however, that with the introduction of many refinements in steel manufacture and the growing demand for special and alloy steels, the increased use of scrap as a raw material is not without its complications and that more care will be required in the future in the selection of scrap, as exemplified by the refusal of some mills to use their own scrap unless the identity and chemical analysis have been preserved.

Mr. Tower said that the output of steel was larger in 1935 than in any year prior to the World War, and pointed out that steel mill operations increased from 20 per cent of capacity in 1932 to 48 per cent in 1935, with-

out substantial help from either the railroads or the heavy construction industry. More than a generation ago these two customers, he stated, dominated the steel trade, consuming more than one-half of all the steel produced annually. In 1935, they took less than one-fifth of the steel output and the production of rail, which once accounted for about 25 per cent of the total finished steel output of the country amounted to barely more than 5 per cent last year. He considered that the steel industry is still far from enjoying a satisfactory measure of recovery, however, and that this situation will be substantially improved when conditions permit the railroads to buy more steel.

While the amount of scrap exported is small compared with the tonnage consumed in this country, the importance of the export market as an outlet for scrap iron and steel sold by the railroads and other producers, and, correspondingly, as a factor in the prices obtained for it, was brought out in a statement of a former secretary of the Scrap Iron Association of Germany. In 1934, he stated, there were 1,900,000 tons of scrap exported from the United States, compared with 95,000 tons from Germany, 220,000 tons from Great Britain, 270,000 tons from the Netherlands, 337,000 tons from Belgium and 621,000 tons from France, and exports from the United States increased to 4,000,000 tons in 1935. Even England is now a steady customer of the United States, and this country is now supplying 50 per cent of the total volume of scrap exported, as compared with only 20 per cent in 1930 and 1932.

Discussing the probable trend of scrap prices, J. E. Jacobson, Luria Brothers, Pittsburgh, compared the relation of the average prices paid for No. 1 melting steel and basic pig iron in Pittsburgh in January of each year since 1902, and sought to show that scrap prices do not bear a fixed relation to pig iron prices but vary according to the rise and fall of ingot production. He stated that if open hearth technicians were correct in assuming that No. 1 heaving melting steel is worth 105 per cent of the price of pig iron, it should be selling for $19.95, or 75 per cent more than the prevailing price, because pig iron is now selling for $19 at Pittsburgh. He also pointed out the difficulty of ascertaining the value of scrap to each mill on this basis, since a mill making its own pig iron is bound to be guided more largely by the actual cost of producing its own pig iron than a mill which must buy its pig iron.

Scrap and Pig Iron Prices Compared

MONTH OF JANUARY

	Heavy melting Pittsburgh	Basic pig iron—Valley	Scrap over pig iron	Scrap under pig iron
1919	$20.80	$30.00	.....	–$9.20
1920	26.50	38.20	.....	–11.70
1921	15.00	29.35	.....	–14.35
1922	14.50	18.30	.....	– 3.80
1923	21.65	25.90	.....	– 4.25
1924	21.10	21.40	.....	– .30
1925	22.10	21.90	+$0.20	.....
1926	18.75	20.00	.....	– 1.25
1927	17.00	18.50	.....	– 1.50
1928	15.35	17.00	.....	– 1.65
1929	19.00	17.50	+ 1.50	.....
1930	16.55	18.50	.....	– 1.95
1931	13.00	17.00	.....	– 4.00
1932	10.25	15.00	.....	– 4.75
1933	8.35	14.00	.....	– 5.65
1934	13.05	17.00	.....	– 3.95
16 years average, post-war				– 4.16
15 years average, pre-war				– .47
2 years average, war period				– 4.87

He concluded his analysis with the statement that during periods of prosperity, scrap prices always rise above those of pig iron before a decline sets in, and that, as the demand for steel expands, there is no reason why scrap prices should not advance to a value more commensurate with the prevailing price of pig iron if operations continue, as expected, at the present rate.

Over 200,000 Railroad Jobs Not Protected By Law

WASHINGTON, D. C.

AN estimate that there are now over 200,000 railroad employees who are no longer protected by Section 7 (b) of the emergency transportation act of 1933 and who, therefore, could be dismissed if their services were made unnecessary by co-ordination projects, is given in a study of "Employment Attrition In The Railroad Industry" prepared by the Co-Ordinator's Section of Labor Relations, O. S. Beyer, director. In an accompanying statement Co-ordinator Eastman said the study had been prepared because of its important bearing upon plans for protecting employees exposed to dismissal as a result of co-ordination projects such as those recommended by other sections of his organization now being studied by the railroads and that it was being released in the hope that it might prove helpful in the negotiations being conducted by representatives of the labor organizations and the managements.

The report also refers to "the relative ineffectiveness of Section 7 (b)" thus demonstrated as lending added significance to the principles underlying the plans previously recommended by the co-ordinator for protecting employees displaced as a result of a co-operative unification of railroad facilities. It says that "this ineffectiveness is occasioned by the attempt to freeze employment conditions as of a particular moment of time" and that "labor has a right to adequate protection against dismissals, but that protection must be of such a nature that normal attrition plus increases in employment cannot destroy it."

The study, Mr. Eastman said, was based upon an examination of the employment records of several hundred thousand railroad workers in all sections of the country. It was found that during each year about 5 per cent of employees leave service for causes, such as death, retirement or resignation, which may be classified as "normal attrition." This represents an average of attrition rates which vary considerably by occupation.

"Normal attrition plus an increase in employment since May, 1933, has reduced very materially the protection to railroad employees afforded by Section 7(b) of the Emergency Railroad Transportation Act. It is estimated that there are more than 200,000 employees now on the payrolls of railroads who do not have the benefit of that protection. Normal attrition is also important for another reason. Even if the employees whose services were made unnecessary by co-ordination projects should be retained, the economies would, because of this attrition, be realized gradually, and the full benefits would be obtained sooner than many have thought. Representatives of the labor organizations and the managements are now, I understand, in the midst of an attempt to solve this problem by agreement. I believe this to be a wise course."

In a memorandum to Mr. Eastman summarizing the study Mr. Beyer says:

In your several annual reports you have pointed out that protection for railroad employees subject to dismissal as a result of plans for co-ordinating and unifying railroad facilities should be made an essential part of such plans. When the Emergency Railroad Transportation Act was passed in 1933 in order to provide governmental stimulus to the elimination of wasteful railroad practices, a provision (Section 7b) was inserted guaranteeing employees on the payroll in May, 1933, against loss of their jobs or reduction in compensation as a result of co-ordination. This section has been the subject of heated controversy. It has been alleged by the railroads that it completely defeats

any attempt to secure the advantages of unification. It has been vigorously supported by the railroad labor organizations, who at the same time apparently have felt uncertain of its effectiveness and have not diminished their opposition to co-ordination measures.

This study of employment separation rates and normal attrition was undertaken in the light of this controversy in order to answer the disputed question as to the value of a labor freezing agreement such as Section 7(b) and to show the importance of normal attrition in planning co-ordination projects. By normal attrition is meant the rate of separation of employees who separate permanently from railroad service for causes that are more or less independent of business changes. These separations are caused by death, disability and retirement, but they also include a fairly large number of separations due to furloughs that become permanent and to quits and discharges.

This study was based upon the employment records of more than 400,000 employees on 14 Class I railroads during the period 1925-1935. Data for the years 1925-1933 were obtained from personnel records used extensively in other studies of the Section of Labor Relations. A special study was made of final separations from May, 1933, to May, 1935, of employees on the 14 railroads who received pay during May, 1933. These roads account for about one-fourth of the employment on all Class I railroads and their operations extend to every major region of the United States.

Based on separation data from the above sources, it is estimated that about 5 per cent of all railroad employees, on the average, may be counted on to leave service each year for reasons that may be attributed to normal attrition. While this rate of attrition is fairly regular it tends to be greater in good times than in bad, because in times of widespread unemployment workers are far less ready to relinquish their jobs. Irrespective of these variations, attrition exercises a constant influence toward reducing the number of employees in railroad service. It is thus responsible for a large number of new employees in industry, even when employment has ceased to expand or has begun to turn slightly downward.

With an over-all attrition rate of 5 per cent, the average employee exposed to dismissal by coordination will need protection for a relatively few years only. This follows because one-twentieth of all the employees whose work may be merged as a result of unification (i e., those who become surplus as well as those who do not) will separate permanently from the service on the average during each year.

This rate of course varies by occupational groups. For train and engine service employees it amounts to between two and one-half to three and one-half per cent, for maintenance of way employees from 6 to 11 per cent, for shop employees from four and one-half to 9 per cent, and for clerical employees from 5 to 10 per cent. On the whole, the attrition rate of skilled employees is lower than that of unskilled and the rate of groups of employees with relatively high seniority standing in the industry is lower than among junior employees.

The reduction of surplus employees through normal attrition will be considerably affected if a given coordination project is confined to certain occupational classes. Thus, if shops or maintenance of way work are merged, the average attrition rates will be considerably greater than the average of 5 per cent for all employees. If a rapid increase in railroad operations occurs at the same time, a 10 or 15 per cent surplus of employees in these occupations might disappear in less than a single year. If, however, the institution of a coordination plan coincides with a period of declining traffic, the effect of normal attrition will be diminished, particularly so because it will be difficult to distinguish between employees who are made redundant by consolidation and those whose services are no longer needed because of the change in business conditions.

In this connection it should be emphasized that not all employees whose work may be affected by a coordination project become surplus as a result of such a project. The attrition rate, however, is based on the total number of employees involved. All of these facts taken together are of great significance since they indicate that if the savings to be made are large enough, unification plans would not be prevented in the long run even if the surplus employees were not removed immediately from the payroll.

The normal attrition rate is also of importance in appraising the value of a labor freezing agreement, such as Section 7(b) of the Emergency Railroad Transportation Act, 1933. Whenever employees are protected in their jobs as of a given date normal attrition plus increases in employment can bring into the situation a large number of employees who have no protection whatsoever.

This study shows the effect of these forces on the attempt to guarantee the employment of railroad workers who were on the payroll in May, 1933. Five months after May, 1933, attrition and employment increases had placed upon railroad payrolls 130,000 employees not subject to Section 7 (b) protection because they had not received pay in May, 1933. One year later the number was 170,000, and two years later 190,000, or 17 per cent of the employees on all Class I railroads. The number of unprotected employees is even larger at the present time and any considerable increase in employment would rapidly add to it.

This brief summary of the information received as a result of this study gives additional emphasis to the proposals which you put forward in your annual report of last year as necessary steps in meeting this problem. The first of these, compulsory retirement of superannuated employees with pensions graded according to earnings and length of service, will aid greatly not only in increasing the efficiency of railroad operations but in reducing a surplus of employees that may result from co-ordination. A retirement plan has again been enacted into law but, like the previous law, is being attacked on the ground of constitutionality. Nevertheless, an orderly system of retirement with pensions for railroad employees is fundamentally sound. If the present law is not sustained, a way must be found to establish a uniform system of retirement with pensions for the railroad industry.

The second proposal, dismissal compensation, is of even more direct and immediate value to employees who may be threatened with loss of jobs as a result of co-ordination. The plan will provide a substantial benefit to every employee whom a given plan displaces. This benefit, like retirement pensions, is graded by age, earnings and length of service. It may not eliminate hardships entirely, but it will greatly reduce them. And its cost represents an expense that may fairly be charged to technological change.

The executives of the railroad labor organizations will shortly confer with management in an attempt to find, through agreement, a satisfactory solution to the problems discussed here. These efforts are highly commendable, and it is hoped that they will meet with success. While the facts developed in this study may not indicate the form that such an agreement ought to take, they at least mark out and attempt to measure important factors to which consideration should be given. And they provide a few warning signs against dangers that it would be well to avoid.

The report also says that the combined effect of normal attrition and increases in railroad employment "has in large part nullified" the protective value of Section 7(b) to many railroad employees.

Of these two forces, separations from service due to attrition represent the more constant and stable factor. In the 12 months following May, 1933, 6.9 per cent of the railroad employees who received pay in that month were separated from service and had not returned by May, 1935. In the next 12 months 6.7 per cent of the May, 1933, employees who were still in service in May, 1934, had been separated from railroad service and had not returned by May, 1935. It can be expected that this rate of separation of the May, 1933, employees will continue at about one-half of one per cent per month, since, while the quit, discharge and furlough rates tend to be less as these employees accumulate greater lengths of service, the death, disability and retirement rates will be greater.

The number of new employees, however, depends upon changes in traffic conditions, modified by changes in railroad technique and organization. Even a moderate increase in railroad traffic will tend accordingly to increase greatly the number of employees in railroad service who are not subject to Section 7(b) protection because they had not received pay during May, 1933. A rapid increase, such as occurred during the late summer and fall of 1933, can add tens of thousands to the number of unprotected employees within a comparatively few months.

It must also be remembered that the Emergency Transportation Act provided that no employee should be placed in a less favorable position in respect of earnings as a result of co-

ordination than he occupied in May, 1933. Since that time the 10 per cent wage deduction of February 1, 1932, has been restored. If a large consolidation plan should be carried out at the present time there would not only be a large margin of employees who could be dismissed without running counter to the act, but the earnings of those still subject to Section 7(b) protection could be reduced as well.

There are two additional factors that would permit reductions in compensation without violation of the Emergency Transportation Act. Not only have those employees who were in service in May, 1933, had their 10 per cent wage deduction restored since then, but many have advanced to positions of greater earning opportunities. Some have been promoted and others have bid in and secured runs or better assignments yielding higher compensation than they enjoyed in May, 1933. Furthermore, the discontinuance of many of the mileage limitation agreements and short workday arrangements in effect during May, 1933 have further operated to increase the compensation of many employees.

Repair Cost of Diesel and Diesel-Electric Locomotives

By W. D. Bearce*

DATA now available show the average annual maintenance cost of electric locomotives to be less than five per cent of the first cost and indicate that Diesel-electric locomotive maintenance will not greatly exceed this amount.

Electric locomotives have been used by many of the railroads for more than 30 years and they constitute a conspicuous example of long-life equipment, with the contingent low maintenance, high availability and superior dependability. Compared to equipment of other types designed for performing similar service, the electric locomotive on this account naturally represents a greater investment than other shorter lived types of equipment. Records covering many years of service, in fact, indicate that far from being an expensive piece of equipment, the electric locomotive is most economical when the amount of work per unit of service is considered. While the initial investment may seem somewhat high, the return on this investment is invariably amply sufficient to justify the first cost.

Records on Repair Costs

In order to analyze the maintenance of electric locomotives properly, computation has been made of a large number of records covering the item of repair costs (ICC Account No. 311), involving some 340 locomotives. The ages of these locomotives vary from 3 to 30 years. The periods of service selected for study cover from 3 to 21 years each. The operation includes freight, passenger and switching service.

Locomotive maintenance is usually stated in cents per locomotive mile. A variation of this unit for comparative purposes consists of a proration giving the cost per locomotive mile per 100 tons on driving wheels. It is thus possible to compare maintenance costs on different sized units on the basis of performance, since it may be generally assumed that the work done by a locomotive corresponds in general to its weight on driving wheels.

For switching locomotives—particularly recently built Diesel-electric designs—it has been found instructive to make comparisons on the basis of locomotive hours of service. Other methods of comparison have been attempted, including the cost per ton-mile and the cost per kilowatt-hour input. The cost per ton-mile is inaccurate, since no account is taken of the difference in grades. The cost per kilowatt-hour has never been seriously considered, since this represents the input rather than the output of the locomotive and furthermore is not comparable with locomotive power of other types.

For the purpose of this discussion, the available figures on electric locomotive maintenance have been compiled and averages computed to show the cost of repairs in percentages of the original locomotive cost. The figures used indicate repair costs per year ranging from 2 per cent to 5¼ per cent of the first cost. This is equivalent to 50 years in the first case, or 19 years in the second as the length of time required for the repair costs to accumulate to an amount equal to the first cost.

Figures have also been studied on the cost of repairs to Diesel-electric locomotives. These locomotives, however, have been in service a much shorter period and it is, therefore, difficult to compile as complete information as is the case with the straight electric equipment. From figures ranging over five to six years, however, it appears that the Diesel-electric can be maintained at a very reasonable figure; and in some cases its maintenance, as a percentage of first cost, is comparable to that of the straight electric locomotive.

Involved in the question of percentage of maintenance to first cost is the factor of availability for service. With the electric locomotive the relatively small amount expended for repairs indicates that the locomotive is in service a higher percentage of the available time, and it is therefore providing a higher return on the investment. The low repair bill is also an indication of the greater dependability. Where the opportunity offers, as in main line passenger service, the electric locomotive has made unusually high records for annual mileage performance.

The figures below indicate the composite average of repair costs for a large number of electric locomotive units.

First Cost and Repair Costs of Electric Locomotives

Loco. Years	No. Years Record	Total Cost of Repairs (Acct. 311)	Total First Cost of Locomotives	Av. Repair Cost in Per Cent of First Cost*	Years to Equal First Cost
6,226	3 to 21	17,702,397	$34,568,512	4.71	21.23

* Transportation Engineering Department, General Electric Company, Erie, Pa.

Public Responsibility Toward Regulated Industry

(*Continued from page 218*)

policy that it shall not bear with greatly unequal severity upon competing private enterprise.

(4) And if for some reason the public as owner invades the field of private enterprise, without expropriation of the private enterprises, it is the duty of the public enterprise itself to operate as a fair competitor. At all events no ethical sanction would seem to exist for permitting to the public owned enterprise standards of action that the public as regulator denies to private enterprise.

Whether this constitutes the whole of the public duty toward regulated enterprise is doubtless open to debate. That it is extraordinarily difficult to secure practical acceptance of any of it, will be disputed, I think, by few who have watched the course of events in the field of transportation during the last 25 years.

Communications . . .

Smooth Riding Passenger Cars

South Lancaster, Mass.

To the Editor:

I have read your articles on attracting passenger travel, but have found no mention of smooth riding qualities—to me, and I assume to many others, the most important of any of the attractions of rail travel. The large majority of people in either Pullmans or coaches (barring special parties or excursions) read. Vibration certainly does not facilitate this and may prevent it or result in headache, leaving an unpleasant impression of the trip.

When the Royal Scot visited this country I wrote to the president of a railway, on whose vibrating coaches I did a lot of traveling, suggesting that the officers ride on that train when it passed over their rails. Anyone who has experienced a trip on an English train must have noticed the lack of vibration and smooth motion compared to ours.

I received a polite answer to my letter, but the next batch of coaches, though much advertised for their comfort, had the same rough-riding qualities. The roller bearing furnishes a direct metal to metal contact from rail to truck frame, whereas the old style interposes an oil film. Therefore some form of insulator should be provided. This has been done in some cases, but vibration is all too prevalent.

W. G. Landon.

C. G. W. Scrap Costs

Oelwein, Iowa.

To the Editor:

In your article about stores improvements on the Chicago Great Western, published December 28, 1935, the statement is made that 7,212 tons of scrap were handled at Oelwein, Iowa, for $0.0782 per ton. Since the accuracy of that statement has been questioned by some readers, the following explanation is submitted:

We use a 25-ton gasoline crane, equipped with a generator and magnet, which can load 450 to 500 tons of scrap per eight-hour day. There are two parallel tracks at the scrap dock. Light-weight empties are set on the outer track, and the crane works on the inside track. This puts the crane between the empty car and the scrap pile. When a car is loaded, the crane moves it down the track, and spots the next empty car for loading. The cars are switched the night before so that little switching is required by the crane to place them in position for loading. The loading operation is performed without assigning a ground man to remain at the dock to assist the crane. Since the scrap is located close to the reclamation plant, the crane operator sounds his whistle when he requires assistance and it is furnished by the reclamation foreman. The crane has often loaded scrap for a continuous period of two to three hours without any assistance from a ground man. The published cost per ton for the tonnage given is correct.

E. R. Brinton,
General Storekeeper, Chicago Great Western.

New Deal or Old Deal

Buenos Aires, Argentina.

To the Editor:

Your editorial "Old Deal or New Deal" in the *Railway Age* of October 26 is the high point in your campaign for an intelligent judgment on the railway transportation problem in the United States. It is a fine exposition of the impasse that our country seems to be up against because of the lack of a constructive political opposition. You have neatly removed any stigma that your vigorous fight for the healthy continuance of the railways is based on political prejudice and in so doing you have brought up a prime question, Which is the worse?

We are favored here with the expressed opinions of political or economic commentators who pay us a visit from up North and are inveigled into a bit of after-luncheon talking, but I have yet to hear one who attempted any kind of a balanced judgment on the political policies which were being either praised or damned. One thing that we get first hand and undiluted out here is the retaliatory slap against our ill considered tariff, in the way of duties, exchange restrictions and prejudice against the goods we are trying to sell, made by United States labor, of United States materials, hauled on United States railroads.

There should be some sort of medal struck as a commemorative reward for your consistent and opportune effort on behalf of the railroads and the general good of the country. They need it here just as badly as in the United States. Keep up the struggle; maybe someone will listen before it is too late.

Robert A. Carr,
Managing Director, Buenos Aires Office,
Dearborn Chemical Company.

More Comments on the Need for Young Men in Railroading

Cincinnati, Ohio.

To the Editor:

I have read with a great deal of interest the letter from C. A. Warner, entitled "Railroads Need Young Men," which was published in the *Railway Age* for December 28. Mr. Warner has touched on one of the most important and at the same time most delicate subjects before the railroads today. At 29, I have served one of the leading carriers for 12 years; therefore, I feel that I can speak with some authority concerning this subject.

Present conditions are shameful. While there are available numerous young men, a number of whom are talented, but all of whom are eager to assist the railroads in the solution of their problems, they are in most instances, because of lack of seniority, compelled to stand on the side lines, so to speak. I realize that much-needed improvements to railroad facilities and properties are being deferred because of the lack of the necessary capital. But even after the proper amount of capital makes its appearance, the railroads will not have been cured of all their ills.

Trees die from the top—and sometimes businesses. The life span of a business tends to follow the life span of its management. Even when executives remain physically and mentally fit, there comes an inevitable hardening of their outlook. They lose the priceless ability to create the new ideas that are necessary in view of changed conditions. Therefore, unless great forethought is exercised, business and management decline together.

The answer, of course, is "new blood." To avoid hardening of the corporate arteries, younger men must be taken into the organization and moved forward as fast as possible consistent with their ability. They must filter through the organization, adding energy and imparting the insight of youth. Only by investing in youth can a business keep from "acting its age." Railroads must learn to "fuse" the new with the old—to mold the business into a living organism that constantly renews itself, yet always maintains the fundamental qualities that were the basis for its success.

This is a problem that is as serious as any confronting the railroads today, and I often wonder if it is being given the proper thought. It is a delicate subject, and that it is a live one there can be little doubt. Federal Co-ordinator Eastman, in his letter of July 19, 1935, to the Carriers' Regional Co-ordinating committees, made the following statement regarding the Railway Traffic Organization report, prepared by his Section of Transportation Service: "While assembly of the information caused the railroads much labor, the subject with which the report deals is manifestly of great importance, under present competitive conditions. I believe that if the report is studied with care, every railroad will find therein much which will prove of considerable value to it individually. Especially is this true with respect to the employment and training of personnel." The survey then devotes a whole chapter to "personnel."

An old Chinse proverb says, "A journey of ten thousand miles begins with but a single step." The chapter dealing with "personnel" in this report is a step in the right direction; now it rests with the railway managements to keep going in this direction.

E. J. Dennedy.

New Books . . .

The Long and Short Haul Principle of Rate Regulation, by Ralph L. Dewey. 287 pages, 9 in. by 6 in. Bound in paper. Published by the Ohio State University Press, Columbus, Ohio. Price, $2.50.

This is a comprehensive discussion of the development of long-and-short-haul discrimination and of Interstate Commerce Commission policies in connection with the adminstration of Section 4 of the Interstate Commerce Act. After a statement of the problem, the various forms and causes of long-and-short-haul discrimination are reviewed and the issues in connection therewith are set forth. Next come discussions of early and ineffective attempts at regulating the practice, and of regulation following the 1910 amendments, which made the fourth section effective. Other chapters, leading up to the author's conclusions and critique of commission policies, consider developments since 1920, including a brief exposition of pending proposals to amend the fourth section.

Signal Section, Association of American Railroads; Proceedings Vol. XXXII. 580 pages, 9 in. x 6 in. Cloth binding. R. H. C. Balliet, secretary, 30 Vesey St., New York, N. Y. Price $8; to members of the Signal Section $4.

This volume is devoted wholly to the doings of the annual meeting held in Chicago, in March, 1935. In addition to the voluminous abstract of the discussions which took place at this two-day meeting, this volume contains chapter 21 on "Principles and Practices"—signaling for hump yards (27 pages)—and other matters presented by Committee V, filling 84 pages. Designs presented by Committee VI fill about 50 pages.

In connection with the report of Committee X, on signaling practice, there is a four-page review of relations with the Government signal inspection service, as presented to the meeting by S. N. Mills, assistant chief of the Bureau of Safety.

Mr. Schwendt, chairman of the committee on economics, stated that the comprehensive index to signal literature, which the Section ordered to be presented, has been brought up to date and is to be printed.

The Motor Truck Red Book, edited by F. Leslie Jacobus. 672 pages, 10½ in. by 8 in. Bound in cloth. Published by the Traffic Publishing Company, Inc., New York. Price, $7.50.

This second edition of this comprehensive assembly of data on motor transportation brings up-to-date and otherwise revises the initial edition which appeared in 1933. New sections deal with such recent developments as the federal motor carrier act, new state laws and administrative regulations, rules for the transportation of explosives and dangerous articles by highway and the functioning of transportation agents and brokers. The more important court decisions affecting motor transport are summarized and there are, of course, carried over from the 1933 edition and revised those sections on the operation of trucks, rates, tariffs, shipping documents, coordination with railroads, rail-truck service, truck-water routes, etc.

All of the foregoing combine to make the book, which is a companion volume to the Freight Traffic Red Book, an "encyclopedia," covering "practically every phase of motor truck operation," although there remains also some of the special pleading on behalf of motor transport to which attention was called in the *Railway Age's* review of the 1933 edition.

Proceedings of the American Railway Engineering Association for 1935. 1,169 pages. 6 in. by 9 in. Bound in cloth or half Morocco. Published by the association, 59 East Van Buren street, Chicago. Price—cloth, $8; half Morocco, $9.

This volume comprises the reports of 28 of the 29 standing and special committees and the discussions that followed their presentation at the annual convention in March. The wide variety of subjects covered in the reports include practically every phase of railway engineering and maintenance; many problems of operation, especially as operation is affected by facilities; and numerous studies and discussions of the economics of railway maintenance and operation. Because of its wide scope, this volume is of value equally to maintenance, engineering and operating officers. Substantially all of the reports represent the result of several years of intensive work by the respective committees, and it is this thorough study on the part of the committees that has given the proceedings of this association their high standing in engineering literature.

Because of its scope, only brief mention can be made of a few of the outstanding features. Principal among these is the report of the Committee on Iron and Steel Structures, which contains a complete revision of the specifications for fixed spans not exceeding 400 ft. in length, together with supporting data in the form of nine monographs on various items included in the specifications. Another report includes a series of studies on track materials and track design. Still another includes a discussion of the economics of treating locomotive boiler waters; methods of malaria control; and a comprehensive discussion on disinfectants, fumigants and cleaning materials; while a fourth embraces a series of studies of maintenance of way work equipment. In the field of economics, there is a series of studies relating to railway location, railway operation and railway labor, the latter with particular reference to gang organization. Among the valuable features of the proceedings are the statistical data for the previous year on rail failures, cross-tie renewals and tie service records.

Economics of Transportation, by D. Philip Locklin. 788 pages, 9 in. by 5¾ in. Illustrated with charts. Bound in cloth. Published by Business Publications, Inc., Chicago. Price, $4.

This book is brought forth as "a study of the economic aspects of transportation," considering not only the internal economics of the industry itself, but also "the broader relationships between transportation industry and the economic life of present-day society."

Opening with a chapter on the economic significance of improved transportation the author proceeds through a brief survey of pre-railroad times, to chapters on the era of railroad building and the railroad system of the United States. Next come comprehensive discussions of freight rates and their relationships to prices and market centers, the theory of railroad rates and rate making in practice. In his survey of regulation Mr. Locklin considers first its beginning in the Granger laws and then reviews the development of federal regulation from 1887 through the 1933 amendments to the Interstate Commerce Act, finding that the latter "on the whole . . . . may be characterized as improvements." Any remaining controversy over valuation and fair return, he suggests, might be resolved in simple fashion by providing for such variations in the rate of return as would compensate stockholders for changes in the value of money.

Other phases of regulation are treated in discussions of the long-and-short haul clause, railroad accounting, finance, service and liability, while concluding chapters consider the prospects for government ownership of railroads and the present status of water, highway and air transport.

A substantial portion of the book, as the author points out in his preface, is devoted to problems of rate-making. He adds that if it makes "any distinct contribution of new material on the subject of freight rates," such will be found in chapters which evolve "the more important principles recognized by the Interstate Commerce Commission in regulating rates on particular commodities and between particular points." Even though "some inconsistencies appear" in such decisions, Mr. Locklin nevertheless finds that there are discernible, "definite principles and policies," which, with the exception of the commission's policy under section 4, "have received little attention from economists."

While he does not hesitate throughout to set forth his frank comment and conclusions on specific questions which have arisen, the author offers no "solution" of the transportation problem as a whole—long study has made him skeptical of so-called "solutions," especially when he observes new problems and situations constantly arising to "upset adjustments previously worked out."

Odds and Ends . . .

Living Link with the Past

There is living in Chicago today a woman who, as telegrapher for the Reading, received and transmitted, on April 15, 1865, the dread message that startled the world: "President Lincoln has been assassinated!" She is Mrs. Maria Reagan, who recently celebrated her 98th birthday.

A Bridge Problem

When the new railway bridge over the Dniester river, between Russia and Rumania, was opened recently, a delicate international problem presented itself. The Russians insisted that the ceremonial ribbon for snipping purposes should be bright red, but the Rumanians objected. After some parley, white was agreed upon.

Historic Locomotive

The London & North Eastern of England has just withdrawn from service a locomotive that was constructed in 1891 in the record time of 9¾ hr. This example of record building was intended to demonstrate how quickly a locomotive could be put together. The engine compiled 1,127,750 miles before being consigned to the Davey Jones' locker of railroads.

Shot Cuts Rail Signals

Because a hunter fired at a rabbit and missed, all Erie trains in a 25-mile area were brought to a stop. The shot severed a cable in the automatic block system near Servin, Ind., and the resulting short circuit set the signals against all approaching trains. Railroad detectives found the hunter, who paid $3.50 for the material needed to repair the cable.

Passenger Department Longevity

The Pullman Company challenges any railroad to beat its record of having had only five men in charge of its passenger department since its inception in 1870, an average tenure of office of 13 years each. The five men and their service as department heads have been W. G. Taylor, 2 years; G. M. Gray, 23 years; W. I. Midler, 13 years; H. P. Clements, 23 years; and E. P. Burke, appointed in 1931 and still serving.

Are You Superstitious?

On a recent Friday, the 13th, a Chicago, Milwaukee, St. Paul & Pacific train arrived in the Chicago Union station on track 13, pulled by engine 6106, whose numbers add to 13. Terminal Trainmaster Henry E. Sittler (13 letters) met the train, which was driven by Engineman Stephen R. Waite (13 letters) and Fireman William Porohl (13 letters). Despite this handicap—or perhaps because of it—the train pulled in right on time.

Canine Safety

A dog that wears goggles and attends safety meetings regularly is the pride of employees of the Louisville & Nashville shops at Ravenna, Ky. The dog, Happy, wandered into the shop grounds and was adopted by the men. They soon taught him the importance of wearing goggles around a railroad shop, and now Happy is never without them. Each month when the men hold their safety meeting Happy and his goggles are to be found in the seat of honor beside the chairman, listening to the proceedings with dogly dignity. As soon as he is big enough to wear long pants, Happy will be given a pair of bicycle pants guards to put around his ankles so the bottoms of his trousers won't get caught in the machinery.

For Stamp Collectors

The steadily growing list of railroaders and others who are making collections of stamps dealing with railway scenes will be interested in the fact that the German railroads are to be honored by a special issue of postage stamps in connection with the centennial celebration of the German railways. Stamps will be issued showing locomotives from 1835 to 1935, including the new, fast Diesel trains in operation on the German railways today.

Silent Night

Carols were sung in Grand Central Terminal, New York, Christmas Eve from 7:15 to 9:30 o'clock. These carols for belated travelers are fast becoming a tradition in the terminal, for the custom has been followed for the past seven years.

Barter

To the Italian railways goes the distinction of a most elaborate bartering arrangement, the details of which follow. The Polish government, desiring two new 16,000-ton liners for American service, placed an order with an Italian shipbuilding concern. The Poles had no cash, but offered payment in coal, for which the shipbuilding company had no use. It in turn made a trade for the coal in exchange for transportation with the Italian State Railways. Thus everyone was satisfied and Poland got its ships.

Streamliner Problem

The increased speed of passenger service this year moves us to look into the future and propound the following problem, which, though it may look simple, has a few catches in it.

Assuming streamliners were running between Chicago and New York every hour on the hour, and making the run in 12 hrs. How many westbound through New York-Chicago trains would a Chicago-New York train meet on its way to New York if it left Chicago at 9 a.m.?

Lackawanna to Buy an Owl

The Lackawanna intends to buy an owl. Kingsland shops, in which passenger cars and electrical equipment are repaired, will continue to operate with great difficulty until the owl is put to work. Hordes of sparrows became an intolerable nuisance a while ago at Kingsland. Notwithstanding the fact that carpenters had boarded up the eaves of the shops, the sparrows chirped merrily. Attempts by the mechanics to disturb their slumber were met by the strategy of a mere flutter to more hazardous perches in other sections of the shops. One day last summer a horned owl showed up at the Kingsland shops. Then the floor of the shop was strewn with feathers and with innumerable carcasses of the sturdiest among the sparrows. After a few nights of ruthless massacre the sparrows that had escaped departed for points unknown. But the owl left after a week and the sparrows are now thicker than ever, so the Lackawanna is in the market for another owl.

Britain's Little Railways Closing Up

One by one Britain's little railways are closing down, says London Answers. The latest to stop working is the Lynton-Barnstaple Railway in North Devon. This was a narrow-gage line, which claimed to give its passengers the most picturesque train journey in England. The scenery along the 19-mile route was magnificent. The railway was opened in 1898 and was absorbed by the Southern in 1923. Another little railway, sometimes described as the quaintest in England, is likewise doomed. This is the Brill "tram," a light railway running through the Vale of Aylesbury, between Quainton and Brill. It was opened 63 years ago to carry the produce and workers of the Duke of Buckingham and was rented by the Metropolitan Railway in 1899. It has no signals. In some places there are no ties and the driver gets down from his engine to open the gates at grade-crossings. Once there was not even an engine—the original coach was drawn by a horse. But the Brill train runs to time—so much so that, in some places, farm laborers know that it is time to down tools when it passes in the afternoon. They are complaining now that when it stops working they won't know the time any more.

NEWS

Suggests Super-Highways and Grade Separations

Public Works Administrator Ickes asserts that public works theory remains untried

Asserting that "the public works theory has never really been tried and therefore cannot have failed in the United States," Harold L. Ickes, Secretary of the Interior and Administrator of Public Works, in an address at Washington, D. C., on January 26 suggested the construction of "super-highways" and elimination of every grade crossing in the United States as among the types of monumental public works that could be done on a national scale. After deducting the funds used for other purposes Mr. Ickes said that only about $1,200,000,000 had been spent annually under the public works program and that "instead of siphoning enough money into the channels of trade through the construction of public works to do a recovery job we have been using an eye-dropper." His suggestions included "three magnificent super-highways from the Atlantic seaboard to the Pacific, bisected by three or four similar ones running from Canada to the Mexican border, or to the Gulf coast," and he said he had long desired to see the elimination of every grade crossing in the United States, "excepting only those on insignificant spur and branch lines that are hardly ever used." "Here indeed," he said, "is an enterprise to engage the interest of the richest nation in the world . . . Nor should grade crossing elimination be restricted to junctures between highways and railroads. In many parts of the United States where vehicular traffic is unusually heavy there should be grade separation at highway crossings." Referring to the work that has been done with P.W.A. loans Mr. Ickes mentioned that made to the Pennsylvania.

"Here," he said, "was a straight loan to the Pennsylvania Railroad of approximately seventy millions of dollars at 4 per cent (be it noted in passing that the major portion of the securities taken by the government for this loan was subsequently sold by us at a profit of more than $2,000,000). This project consisted of finishing the electrification of the line from New York to Washington and of certain other portions of the road; of building new electric locomotives and freight cars; of changing old locomotives from passenger to freight; and of relining the old Union tunnel in Baltimore. The project was completed in about twenty-two months. The direct employment numbered 15,000 men. The indirect employment probably ran to at least 30,000 men. The total employment, both direct and indirect, was scattered among 15 states."

Government Competition—The Noisy Molehill and the Silent Mountain

We hear a great deal now of the construction by the government of power plants which, when completed, will compete with plants of private operation. The government money which has been wastefully used in highway and waterway construction to compete with private investment in railway transportation is a veritable mountain by comparison with that being utilized in competition with private investment in the power business.

—From an Address by L. F. Loree, President, D. & H.

New York Railroad Club Meeting February 14

The New York Railroad Club will for February alter its usual third-Friday schedule and hold its meeting this month on the second Friday, February 14, at the auditorium of the Engineering Societies building, 29 West Thirty-ninth street, New York. This will be "Electrical Night," with a program prepared under the auspices of the Westinghouse Electric & Manufacturing Company; speakers will be Dr. S. M. Kinter, vice-president engineering, and Charles Kerr, transportation engineer, both of Westinghouse. Following these there will be a demonstration of new electrical tricks by Dr. Phillips Thomas, also of Westinghouse.

New Bills in Congress

Representative Lundeen, of Minnesota, has introduced a bill H.R. 10,595, similar to the government ownership bill introduced in the Senate last year by Senator Wheeler, providing for the creation of a corporation to be known as the United States Railway Service to acquire control of the railroads of the United States.

Representative Monaghan, of Montana, has introduced in the House bills to amend the railroad retirement act and the accompanying tax act by adding a provision that "federal judges are forbidden to declare this act of Congress unconstitutional" and that "no appeal shall be permitted in any case in which the constitutionality of this act is challenged."

Eastern Roads Announce Storedoor Service Plans

Tariffs, effective April 1, will bring pick-up and delivery for l. c. l. in all territories

Storedoor pick-up and delivery service for l.c.l. freight will be available generally in all territories on April 1 as a result of a decision announced following a meeting of traffic executives of the principal Eastern roads in New York on January 24. The announcement, made by D. T. Lawrence, chairman, Traffic Executive Association—Eastern Territory, revealed that "substantially all" lines serving Official Classification territory will join in the storedoor tariffs.

These tariffs will provide for "collection and delivery service without extra charge on less carload freight in Eastern territory when originating at and destined to points in the United States, regardless of distance. It is also contemplated that, where the service at point of origin or destination is performed by shipper or consignee, an allowance of 5 cents per 100 lb. will be made."

Thus the projected arrangements follow generally the storedoor service plan which became effective in the West on January 17 and which is contemplated in tariffs filed by Southern roads to become effective early this month. In addition to the Southern roads listed in the *Railway Age* of January 25, page 170, as participants in the latter, the Norfolk & Western on January 27 announced its adherence.

Only 8,903 New Freight Cars Installed in 1935

Class I railroads installed 8,903 new freight cars in 1935, according to reports compiled by the Association of American Railroads. New freight cars installed in 1934 totaled 24,103. In 1933, there were 1,879 placed in service. Forty new steam locomotives and 102 new electric locomotives were installed in 1935 compared with 59 new steam locomotives and 31 new electric locomotives in 1934. Only one steam locomotive was placed in service in 1933. No reports are available as to the number of electric locomotives installed in that year.

New freight cars on order on January 1, 1936, totaled 12,805 compared with 628 on the same day in 1935 and 224 on the same day in 1934. The railroads also had on order five new steam locomotives and three new electric locomotives. New steam locomotives on order on January 1, 1935,

totaled seven and on the same date in 1935 there was one. New electric locomotives on order on January 1, 1935, totaled 31, but no reports are available as to the number on January 1, 1934. Freight cars and locomotives leased or otherwise acquired are not included in the above figures.

Union Attacks Reduction in Yard Crews

Eighty-one railroads operating in Illinois have been named in complaints filed with the Illinois Commerce Commission by the Brotherhood of Railroad Trainmen, claiming that switching and yard crews have been reduced to the danger point.

City of Portland to Return to Service

The Streamliner "City of Portland" of the Union Pacific will resume service between Chicago and Portland, Oregon, on February 6, on its 39¾-hr. schedule (2272 miles). The train was taken out of service last year for repairs and for the installation of improvements.

Minneapolis Passenger Traffic Club Elects Officers

The following officers of the Minneapolis Passenger Traffic Club have been elected for the ensuing year: President, W. R. Burgess, Chicago, Burlington & Quincy; vice-president, Emil A. Dietz, Canadian Pacific; secretary, Ray B. Baker, Baltimore & Ohio; and treasurer, J. M. Langness, Chicago & North Western.

Hiawatha in Two Sections

Due to unexpected heavy traffic, the Hiawatha of the Chicago, Milwaukee, St. Paul & Pacific was operated out of Chicago, on January 24, in two sections carrying 333 passengers. At 9:30 in the morning it was estimated that the number of passengers would total 250, or a number that could be accommodated in the eight cars to carry normal business, but at 10 o'clock demands for tickets had increased to such an extent that it was decided to make up a second section for Milwaukee (85 miles), with coaches, parlor cars and a dining car to start with the first section (1 p.m.). The regular train carried 155 passengers and the second section 178.

I. C. C. to Consider Proposed Change of Time Zones

The Interstate Commerce Commission has re-opened its standard time zone investigation for further hearing at Chicago on February 24 on the question of whether its orders of 1918 and thereafter, defining the boundary line between United States standard eastern and central time zones, should be so modified that the city of Chicago, or any of the remainder of the state of Illinois, or any portion or all of the states of Michigan, Ohio, Indiana, or Wisconsin, now in the central zone, shall be included in the eastern zone. The particular occasion for the proceeding is a petition by the city of Chicago, whose city council has passed an ordinance adopting standard eastern time, effective March 1, as the official and lawful time for the transaction of all city business, and a petition in opposition thereto filed by the Chicago Daily News. The commission in its announcement also recalls a petition of the state of Michigan seeking the inclusion of that state within the eastern zone which was denied in 1932. The hearing will be held before Commissioner Aitchison.

The matter involves a lively controversy between two Chicago newspapers over the circulation of the closing New York stock market quotations which are now available for an afternoon paper but which would be largely left for morning circulation if the time were moved up an hour.

Medals for Heroism

The directors of the Pennsylvania, at their meeting in Philadelphia, Pa., on January 22, awarded the company's bronze medals for heroism to Robert A. Mason, of Cape Charles, Va., and Joseph Mustafa, of East Rockaway, N. Y. The presentation was made to the recipients by President M. W. Clement. The first named is an oiler on the company's steamer and the other a crossing watchman on the Long Island.

Mason, at great personal risk, saved the life of an 11-year-old boy from drowning on November 3, 1934, the boy having fallen between the wharf and the steamer. Mustafa risked his life, and nearly sacrificed it, in snatching a 9-year-old girl, on January 19, 1935, from in front of a fast-moving passenger train.

A Vital Aspect of Grade Crossing Problem Usually Overlooked

"A personal communication just received from a brother gives harrowing details of a recent accident on the division or which he is employed, that cost an engine crew their lives. It was not a collision, not a boiler explosion, nor was it due to any defect in the equipment; it was caused by hitting an automobile on a grade crossing.

"The number of fatalities and serious injuries resulting from these grade crossing accidents is appalling. In many cases members of the engine crew are victims as well as the careless automobile driver. As a matter of fact there are instances in which the careless driver escapes unscathed while death or serious injury results to one or the other, and sometimes to both members of the engine crew.

"The case above referred to is one of these latter; when the engine turned over the cars piled up all around it, the engineer and fireman were trapped underneath and both were dead when reached. Members of the train crew, however, on their way to the front end found the automobile driver standing at the crossing without a scratch viewing, no doubt in anguished dismay, the terrible effects of his carelessness—the inexpressibly horrible consequences it had visited on these good men and their loved ones, as well as the enormous property damage it had occasioned the railroad company. . . .

"The United States government is expending enormous sums of money to give the unemployed work on public enterprises. It seems to us that there is no undertaking that should engage the attention of the federal government that is of greater importance than is that of permanently abolishing these death traps. . . ."

—From an Editorial in the B. of L. F. & E. Magazine.

Coal Shippers Ask Removal of Emergency Charge

Shippers of lake cargo coal, including the Property Owners' Committee representing districts served by the Chesapeake & Ohio, Louisville & Nashville, New York Central, Norfolk & Western, Virginian, and other railroads, have asked the Interstate Commerce Commission to re-open Ex-Parte No. 115 for reconsideration and to issue an order requiring the railroads to cancel the 15 cents a ton emergency charge on lake cargo coal. Under present tariffs the charge expires on June 30, although the railroads have filed a petition asking that the emergency charges be continued. The petitions of the coal shippers, filed before that of the railroads, offered the argument that if the charge is to expire on June 30 the shipment of lake cargo coal will be delayed until after that date.

German Railways Calendar

The German Railways have again issued their handsome, illustrated calendar—which is so much more than a calendar. Actually it is a 160-page book (pages 6¼ in. by 10¼ in.) of information about the German railways and their services. No page is devoted to more than three days, so that as the year unfolds, at least twice weekly, when a page is torn off, a new photograph and a new public relations or merchandising message of the railways appears. Some of the illustrations exploit the scenic qualities of various points served by the railways; others show the inside of railway shops, signal towers, etc.; still others portray railway employees, new equipment, yards, signals, etc. Altogether a highly interesting and attractive reminder of the first year of the German railways' second century; published by the Konkordia Verlag, Leipzig, price 3½ reichsmarks.

Signaling Principles and Practices

The series of pamphlets devoted to "American Railway Signaling Principles and Practices," issued by the Signal Section of the Association of American Railroads, has now reached its twentieth number, which is devoted to hump yard systems; and this pamphlet of 89 pages, Number XXI, has just been issued from the office of R. H. C. Balliet, Secretary, 30 Vesey street, New York city. The price is 35 cents; 25 cents to members of the Section and railroad employees. The numbers of the series not yet filled are I. IV and XXII. The operation of hump yards, for breaking up freight trains and classifying the cars, has brought within the scope of the signal engineer's work the

construction and operation of car retarders, as well as of the management of the varied machinery incident to hump operation, and this pamphlet contains complete descriptions of all these features.

Secretary Balliet has for sale, at one dollar, binders in which may be placed 13 of these chapters without punching.

Eastern Car Foreman's Association

A special meeting of the Eastern Car Foreman's Association to include a dinner and floor show, will be held in Boston, Mass., at 7 p.m., February 10, at Linde Restaurant, 36 Huntington avenue, Boston. Following the dinner and entertainment, a short meeting will be held. Tickets costing one dollar and reservations can be secured from W. E. Cade, Jr., secretary, New England Railroad Club, Boston, Mass. The New England Railroad Club meeting will be held the following day, February 11.

May Appeal Maritime Potato Rate Case

Application by the transportation commission of the Maritime Board of Trade for a reduction in freight rates on potatoes shipped from the Maritime provinces to Ontario and Quebec markets, either should be reviewed again by the Board of Railway Commissioners, which denied the reduction, or leave should be granted to appeal to the Supreme Court of Canada. The Railway Board's refusal of the application resulted in this conclusion at a special meeting of the transportation commission in Moncton, N. B., last week.

Action will be taken within the next two weeks, it was said after the meeting.

When the Maritime provinces were arguing through Hon. J. L. Ralston for their reduction on potato rates in December, much was made of the low rates enjoyed by potato-shippers in Ontario, largely due to truck competition, but the railway contended that the Maritime Freight Rates Act, which calls for a 20 per cent reduction, never contemplated giving Maritime shippers the benefit of rates produced by ruthless rate-cutting by trucks in Ontario.

Signal Section Meeting

R. H. C. Balliet, secretary of the Signal Section, Association of American Railroads, 30 Vesey street, New York, has issued the advance notice for the annual meeting of the Section, which is to be held at Chicago on March 9 and 10. Committees II, IV and V on, respectively, interlocking, automatic-block signaling and contracts and instructions, will present the usual elaborate reports, with revisions of a large number of specifications, calling for extensive changes in the Manual.

Committee I (Economics) will present a mass of data on recent developments in apparatus in practice, as reported from experience and studies on the Chicago, Milwaukee, St. Paul & Pacific, the St. Louis-San Francisco, the Missouri Pacific, the Denver & Rio Grande Western and the Delaware, Lackawanna & Western; also extensive further information to be added to the tables in Chapter III of "Principles and Practices." Committee VI presents new material under six heads, and Committee VII offers revisions of eight specifications.

Committee X, Signaling Practice, reports on noteworthy changes in signal practices, together with studies in centralized traffic control, automatic train control, four-block signaling and other subjects.

This pamphlet contains a bibliography, filling 55 pages, a condensation of the index to signaling literature, which was issued in 1910, with additions to bring the matter down to 1935.

Club Meetings

The Northwest Car Men's Association will hold its next meeting at Midway Club Rooms, 1957 University Avenue, St. Paul, Minn., on Monday evening, February 3. The meeting will be devoted to a discussion of changes, proposed by a committee of the association, to be offered for inclusion in the next revision of the A.A.R. rules on interchange.

The Pacific Railway Club will hold its next meeting at the Transportation Club, Palace Hotel, San Francisco, Cal., on Thursday, February 13, at 7:30 p.m. The meeting will be devoted mainly to a round-table discussion of proposals to improve the club, looking to the completion next year of a career extending over 20 years. There will be a report from a committee, appointed at the last meeting to present the names of candidates for election of officers.

The next meeting of the Metropolitan Traffic Association of New York will be held on February 27 when that organization will sponsor a debate on the Pettengill Bill for the repeal of the long-and-short-haul clause of the Interstate Commerce Act. Teams selected from the membership will argue for and against the passage of this bill, while prominent traffic men will act as judges.

PWA Gets Back $103,527,500 of Railroad Loans

The Federal Emergency Administration of Public Works has announced a report by Benjamin W. Thoron, its director of finance, to Administrator Harold L. Ickes, that a total of $103,527,500 of railroad securities taken by the P.W.A. in connection with loans to railroads has been resold to the public through the Reconstruction Finance Corporation at a premium of $1,982,000. This has reduced the P.W.A.'s entire portfolio of railroad securities by more than 55 per cent. On January 1 the P.W.A. still held $86,845,000 of such securities.

The Reconstruction Finance Corporation has issued a summary of its activities as of December 31, 1935, showing that its loans outstanding to 56 railroads, including 23 in receivership or that have filed petitions under the bankruptcy act, totaled $396,249,860 and were secured by collateral having an aggregate present quoted or appraised value of approximately 148 per cent of the amount of the loans. The report said that upon the basis of present quotations there appeared to be a deficiency of $32,500,000 in the collateral of certain of these roads but that the securities that will come to the corporation from reorganizations would in all probability, with few exceptions, be worth the amount of the loans.

From February 2, 1932, through December 31, 1935, the R.F.C. had authorized loans to railroads, including receivers, amounting to $670,142,492, and actual disbursements were $487,216,824. During 1935 the disbursements on railroad loans were $39,933,552.

Steam Railway Accident Statistics October, 1935

The Interstate Commerce Commission's completed statistics of steam railway accidents for the month of October, 1935, now in preparation for the printer, will show:

	Month of October		10 months ended with October	
Item	1935	1934	1935	1934
Number of train accidents:	608	463	5,012	5,033
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	217	226	2,385	2,337
Injured	227	235	2,691	2,795
Passengers on trains:				
(a) In train accidents:*				
Killed	....	3	....	12
Injured	18	57	320	289
(b) In train-service accidents:				
Killed	1	6	16	14
Injured	122	124	1,246	1,232
Travelers not on trains:				
Killed	1	....	7	9
Injured	63	47	511	550
Employees on duty:				
Killed	51	34	448	434
Injured	1,563	1,448	13,448	14,172
All other nontrespassers:†				
Killed	189	147	1,399	1,296
Injured	594	542	4,779	4,683
Total—All classes of persons:				
Killed	459	416	4,255	4,102
Injured	2,587	2,453	22,995	23,721

* Train accidents are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

† Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and non-trespassers*, were as follows:

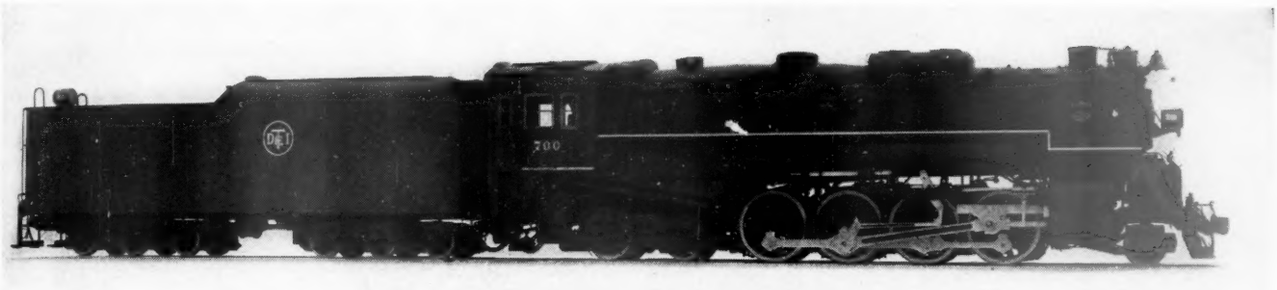
Number of accidents	396	340	2,996	2,891
Persons:				
Killed	159	142	1,286	1,209
Injured	481	390	3,566	3,337

Pettengill Defends Long-and-Short-Haul Bill

Representative Pettengill, of Indiana, sponsor for the Pettengill bill, H. R. 3263, to repeal the long-and-short-haul clause of the interstate commerce act, has issued a statement in reply to a resolution adopted by the Maritime Association of the Port of New York opposing passage of the resolution. In answer to the assertion that passage of the bill "would leave the railroads at liberty to charge such discriminatory rates as they see fit," he points out that the Interstate Commerce Commission, under other sections of the act, would still have complete power to prevent unreasonable or discriminatory rates." He also said that the intercoastal common carriers, which are subject of the Maritime Association's solicitude, are shown to have paid only 5/100ths of one per cent of their revenues in taxes—that is 50 cents out of each thousand dollars taken in, while the tax burden of the railroads

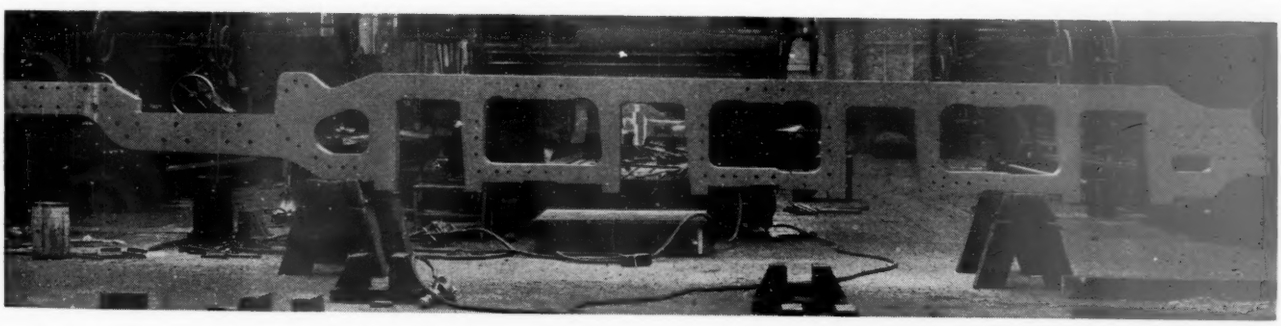
Continued on next left-hand page

DETROIT, TOLEDO AND IRONTON RAILROAD COMPANY



new 2-8-4 type freight locomotives

THESE LOCOMOTIVES HAVE ROLLED SLAB STEEL FRAMES.



The steel used for these frames is high quality homogeneous, normalized and tempered carbon steel of high physical characteristics.

The use of the Slab Steel Frame is a development of the Lima Locomotive Works, Incorporated, and provides a frame of great strength, free from internal strains and defects and greatly increases the factor of safety.

LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO

LIMA LOCOMOTIVE WORKS INCORPORATED

per dollar of revenue is approximately 160 times as heavy. "Just how the taxpayers' burdens are to be increased by giving the tax-paying, self-supporting railroads a chance to compete for a fair share of the water-competitive business," he said, "is hard for the ordinary mind to understand."

Tribute to Railroads' 1935 Safety Record

Because of its belief that the "perfect passenger-safety record of the railroads of the United States for the year 1935 deserves broader recognition than the modest item published in the newspapers," the American Brake Shoe & Foundry Company on January 29 paid tribute to this record of the carriers in full-page newspaper advertisements published in New York, Chicago and San Francisco.

The advertisement calls attention to the fact that "not one passenger lost his life through a passenger train accident on any railroad in the United States during 1935"; and this at a time when safety is "an increasingly difficult problem in all modes of transportation."

"Any one of the more than 800 roads making up our great railroad system," it continues, "might well be proud of such a record, in these days when higher and higher speeds are demanded by the public, while the roads are forced to the most rigid economies in their equipment and operating budgets. But when the nation's entire railroad system, operating over a total of 420,000 miles of track, carried human beings an aggregate of 18,400,000,000 miles without a single passenger losing his life through a passenger train accident, it is a matter for public appreciation.

"To achieve such a record meant remarkable perfection of signal systems and safety devices, and an amazingly high standard of dependability in rails, rolling stock and equipment. But even more important than this, it meant unceasing vigilance and absolute devotion to duty on the part of the great human organization of 995,000 railroad employees. In storm and flood, in fog and sleet, in biting cold and blistering heat, they 'carried on' with an indomitable spirit and a resourcefulness in emergencies required in few other public services.

"The long and unremitting campaign of the railroads for 'Safety First' has borne fruit in the world's safest form of transportation."

Canadian Traffic League Urges Strong Transport Policy

"Strong and courageous action" toward the solution of Canada's railway difficulties was urged upon Minister of Railways Howe in a resolution passed by the Canadian Industrial Traffic League, at its annual meeting at Montreal last week. More co-operation between the railways and more economies were said to be necessary, and the League further insisted that the Canadian National should be placed beyond the reach of local politics.

The League favored the balancing of the federal budget at the earliest possible time, and expressed the belief that "such a desideratum is made almost impossible in the apparent future by the fact that the operating income from the Canadian National Railways barely exceeds operating costs, and in 1934 was some $48,000,000 short of meeting interest on the funded debt held by the public; and that while such interest charges may and probably will be somewhat reduced due to refunding operations, the general prosperity of the country cannot be materially aided thereby." The League urged the necessity of every possible economy in operating costs. It went on to support the Board of Railway Commissioners "as to what should constitute the public interest in the abandonment of branch lines, especially where communities are served by competitive means of transportation, and where the cost of railway operations exceeds the value of such services."

"Inasmuch as the known co-operative joint savings have totalled but one-twentieth of the interest on the Canadian National funded debt," the resolution continued, "every aid and consistent freedom of action be afforded by the Government to Canada's railways to encourage the fullest degree of co-operation; that the Government ascertain the reason for the apparent lack of success of the present method and if co-operation as now conducted is found to be impracticable, inaugurate specific action before the proposed arbitral tribunal, or institute some other means of securing every economy in operation."

On the question of motor transportation, the League reaffirmed its principles, originally approved at the annual meeting in Toronto, in 1933, that schedules of rates and charges should be published; that, within these schedules, common carriers of freight should accept and carry what is offered to them without discrimination between shippers; that operators should be insured against all risks, including third party risks; that operators should keep accounts on a prescribed system and render returns to public authorities on a common basis; and that uniform bills of lading should be used.

Simplified Application Form for Motor Carriers Issued

On the theory that many motor carriers have not filed applications for certificates or permits because of uncertainty as to whether or not they are subject to the motor carrier act, and that in other instances motor carriers have not filed such applications because all of the voluminous information called for in the application forms is not readily available, the Interstate Commerce Commission has approved an "alternate" form of application to assist such operators in protecting their rights under the "grandfather" clause of the act if it is later determined that they are subject to it and so that all operators may have sufficient time to gather necessary detailed information without losing such rights. The short form, which was mailed to about 190,000 motor vehicle operators, may be used in lieu of the regular forms but the user, in filing it, agrees to furnish all the information and data required by the regular forms not later than a date to be hereafter set by the commission. For certain classes of carriers the "red tape" required by the regular forms requires notification of all mayors in the commercial zone of a municipality. Someone has estimated that the New York commercial zone includes some 2,000 mayors.

If any motor carrier is uncertain as to whether it is subject to the motor carrier act or if for any reason application forms B.M.C. 1 or B.M.C. 2 can not be filled out and filed before February 12, the commission urges that this alternate form of application be promptly filled out and sent to the commission. It appears that many motor carriers engaged in local operations, but handling shipments which have moved or will move in interstate commerce, have not filed applications because they are not certain whether they are subject to the motor carrier act. The same is true of many motor carriers operating wholly within one state. If there is any question whatever as to these or other motor carriers being subject to the act, it is urged that they file this alternate form of application. By so doing, their rights under the act will be protected, they will avoid being subject to fines for unlawful operations, and they will waive no rights by filing. It is declared imperative that all motor carriers give this matter immediate attention because all such applications for certificates and permits must be filed with the commission at Washington on or before February 12.

At the time the "alternate" forms were issued, applications had been received from some 10,000 of the 190,000 operators on the commission's mailing list but they were beginning to come in in such numbers that the Bureau of Motor Carriers had stopped taking time to count them in order to be able to devote the time to examinations to see if they had been properly made out. At the same time the commission sent out a reissue of its previous notice calling attention of all motor carriers to the fact that unless their applications are filed by February 12 they may lose valuable rights and that the law does not empower the commission to extend beyond that date the time for filing applications.

New Research Laboratory Opened by British Road

The London, Midland & Scottish of Great Britain recently opened at Derby, England, a new research laboratory, the main purpose of which is to test the principal materials used by that road, particularly metals, woods, paints, varnishes and textiles which are consumed in large quantities.

The laboratory, as described in a recent issue of Modern Transport (London), is a two-story building, having on its ground floor a chemical laboratory, a metallography room, a pyrometry room, a corrosion laboratory, a constant temperature and humidity room, two engineering test rooms, and a workshop and metallurgical furnace room. On the second floor are testing laboratories for the investigation of textile materials and of paints and varnishes. Many tests and appliances have been adopted, and economies in the use and consumption of materials have resulted. Of particular interest is a small motion picture screen, whereon is depicted the actual contact of wheel and rail on a

Continued on next left-hand page

train in motion, clearly indicating lateral vibration. A wind tunnel in the adjacent locomotive shops demonstrates the difference in air resistance between a streamlined and orthodox train.

It was in 1930 that Sir Harold Hartley was appointed L.M.S. vice-president and director of scientific research, and an advisory committee consisting of a number of scientists and the chief technical officers of the L.M.S. was set up. The various sections of the L.M.S. research department possess well-defined spheres of activity, particularly in regard to what may be termed routine work, but in many research investigations co-operation is essential, and this, it is stated, will be greatly facilitated by their being housed in future under the same roof.

The metallurgical section is concerned with investigations relating to the selection and manipulation, by casting, forging, heat treatment, welding, etc., of metals, and for the metallurgical examination of materials that have failed to give satisfactory performance in service. The engineering section deals with research on the design and performance of engineering details of machines and structures, and with the mechanical properties of materials in relation to service requirements. It is also responsible for the investigation into the mechanical aspects of failures of materials in service and for the study of aero-dynamical problems connected with the air resistance of trains, wind pressures, ventilation systems, etc. The textile section is responsible for the inspection and testing of the various textile materials purchased by the company, and for drawing up specifications controlling their quality. This routine work is on a considerable scale, some 8,000 complete tests being carried out each year. The paint section is responsible for the specification and testing of paint materials, some 4,000 samples being dealt with each year. It is also concerned with the routine control of the manufacture of paint and varnish cleaning agents.

Meetings & Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—T. L. Burton, Room 3400 Empire State Bldg., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—F. W. Venton, Crane Company, 836 S. Michigan Ave., Chicago, Ill. To meet with Air Brake Association, Car Department Officers' Association, International Railroad Master Blacksmith's Association, International Railway Fuel Association, International Railway General Foreman's Association, Master Boiler Makers' Association and the Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 816 McCormick Bldg., Chicago, Ill. Annual meeting, October 27-29, 1936, New Orleans, La.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 16-18, 1936, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 5-8, 1936, Toronto, Ontario.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, 1936, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—R. G. Buford, Asst. Mgr., Industrial Development Dept., M-K-T R. R., Dallas, Tex.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Division IV.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 10-12, 1936, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.— M. Fenaja, Missouri Pacific Lines Magazine, Missouri Pacific Lines Bldg., St. Louis, Mo.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M. St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y.

Railroad Division.—Marion B. Richardson, 192 E. Cedar St., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department.—J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.

Division I.—Operating.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section.—R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Next meeting, October 8-10, 1936, Washington, D. C.

Division II.—Transportation.—G. W. Covert, 59 E. Van Buren St., Chicago, Ill.

Division IV.—Engineering.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 10-12, 1936, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 10-12, 1936, Palmer House, Chicago, Ill.

Electrical Section.—E. H. Fritch, 59 E. Van Buren St., Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, March 9-10, 1936. Hotel Stevens, Chicago, Ill.

Division V.—Mechanical.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.

Division VI.—Purchases and stores.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII.—Freight Claims.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.

Division VIII.—Motor Transport.—George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—C. A. Buch, Transportation Bldg., Washington, D. C.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Chief Clerk and Claim Agent, General Claims Dept., Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, June 17-19, 1936, Hotel St. Paul, St. Paul, Minn.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., 1519 Daily News Bldg., 400 W. Madison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2271 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—A. S. Sternberg, M. C. B. Belt Ry. of Chicago, 7926 S. Morgan St., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF LOS ANGELES.—J. W. Krause, Room 299, 610 S. Main St., Los Angeles, Cal. Club not active at present.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—E. G. Bishop, Illinois Central R. R., East St. Louis, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—D. R. Boyd, 2920 Utopia Place, Hyde Park, Cincinnati, Ohio. Operation suspended indefinitely.

CLEVELAND RAILWAY CLUB.—F. L. Frericks, 14416 Alder Ave., Cleveland, Ohio. Meetings temporarily suspended.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—T. D. Smith, 1660 Old Colony Bldg., Chicago, Ill.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash St., Winona, Minn.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, September 16-17, 1936, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROADS AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 810 18th St., N. W., Washington, D. C. Annual meeting, November 10-13, 1936, Atlantic City, N. J.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit at A. R. E. A. Convention, March 9-12, 1936, The Coliseum, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Copley-Plaza, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July and August, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco, and Oakland, excepting June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton (Treas. and Asst. Sec.), First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—Edward Wray, 9 S. Clinton St., Chicago, Ill. Meets with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Meets with Mechanical Division, Purchases and Stores Division, and Motor Transport Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R., Division I.

RAILWAY TIE ASSOCIATION.—I. C. Rowe, 2091 Railway Exchange Bldg., St. Louis, Mo.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—Merged with Association of American Railroads.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—T. F. Donahoe, Gen. Supvr. Road, Baltimore & Ohio, Pittsburgh, Pa. Annual meeting, September 16-18, 1936, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting, October, 1936, Detroit, Mich.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

Continued on next left-hand page

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—R. G. Parks, A. B. & C. R. R., Atlanta, Ga.

TOOL FOREMEN SUPPLERS' ASSOCIATION.—E. E. Caswell, Union Twist Drill Co., 11 S. Clinton St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—R. H. Burgess, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—D. J. Higgins, Gardner-Denver Company, 332 S. Michigan Ave., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—D. Meadows (Treasurer), 58 Roseberry Place, St. Thomas, Ontario.

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M. St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Supply Trade

The Armspear Manufacturing Company has moved its headquarters from 250 West Fifty-fourth street to the R. K. O. building, Rockefeller Center, New York City.

L. F. Sweeney has been appointed assistant to the vice-president of the **Standard Stoker Company, Inc.,** Chicago, vice **C. T. Hansen,** who has been appointed district sales manager, in place of **R. J. Schlacks,** resigned.

James E. DeLong, executive vice-president of **Waukesha Motor Company,** Waukesha, Wis., has been appointed general manager. Mr. DeLong, who joined the organization in 1923, will also continue as head of the executive board.

The stockholders of the **Virginia Bridge & Iron Company** have ratified the sale of its plants at Roanoke, Va., Memphis, Tenn., and Birmingham, Ala., to the **Tennessee Coal, Iron & Railroad Company,** southern subsidiary of the **United States Steel Corporation.**

The DeVilbiss Company, Toledo, Ohio, training school for painters and others interested in learning the technique of spray-painting, and the use and care of spray-painting equipment, will be open for one week on each of the following dates: February 10, March 9, April 6, May 4 and June 8.

William Page, formerly sales engineer of the **Acme Steel Company,** has been placed in charge of the railway reclamation division of **Erman-Howell & Co.,** Chicago, and **C. A. Reagan,** formerly associated with **Briggs & Turivas,** has joined the sales organization of Erman-Howell.

J. B. Spencer, vice-president of the **Southern Wheel Company,** has been elected president of the **Ramapo Ajax Corporation,** with headquarters at New York, to succeed **J. B. Strong,** who has resigned, as noted elsewhere in these columns. Both these companies are subsidiaries of **The American Brake Shoe & Foundry Company.**

Lester W. Seago, for the past ten years with the **Ready-Power Company,** Detroit, Mich., has been appointed eastern district manager, with office at 1775 Broadway, New York City, and **Wesley Davey,** who has been with the company for over five years, will have charge of all Ready-Power service in the eastern territory.

Officers of the **Peerless Equipment Company,** Chicago, following action that became effective January 1, 1936, are as follows: Chairman of the board, **F. A. Poor;** president, **A. A. Helwig;** first vice-president and treasurer, **Philip W. Moore,** with headquarters at 310 South Michigan avenue, Chicago; and vice-president, **Floyd K. Mays,** with headquarters at 230 Park avenue, New York. The Peerless Equipment Company will continue the sale of the Peerless draft gears; the USL Battery Corporation's batteries for air-conditioning, car lighting, signaling and other purposes; the Journal Box Servicing Corporation's process and equipment for waste renovation and oil reclamation; and the Burgess Battery Company's dry cells.

Objections of security holders to a plan of reorganization of the **Pressed Steel Car Company** were swept aside by Federal Judge R. M. Gibson at Pittsburgh, Pa., on January 22, when he ordered the plan submitted for approval to creditors and security holders. In entering the order for the plan as submitted by the company's trustees, the judge was of the opinion that the provisions of the plan are thoroughly practicable. Under the plan of reorganization, there will be a total of 300,000 shares of prior preferred, 81,610 shares of second preferred and 238,816 shares of common. Debenture holders will receive par and accrued interest in new bonds. Present preferred holders will get one share of new common and 9/10 share of new $50 par 5 per cent second preferred. The second preferred will be convertible into three shares of common. Present common stockholders will receive ¼ share of new common. The General American Transportation Corporation, which proposed the plan, will put up $1,500,000 and receive in return 300,000 shares of new $5 par 5 per cent prior cumulative convertible preferred stock and 30,000 shares of new common stock. With this arrangement, General American will control 330,000 votes against a total of 320,426 votes for all other classes of stockholders. The groups representing the preferred stockholders and bondholders oppose the plan.

J. B. Strong has resigned as president of the **Ramapo Ajax Corporation,** a subsidiary of **The American Brake Shoe & Foundry Company,** effective January 30, at the age of 60 years. In the future he will act as a consulting engineer, particularly for The American Brake Shoe & Foundry Company and its affiliates in cooperation with its research department, with address 230 Park avenue, New York. Mr. Strong was graduated from the Sheffield Scientific School of Yale university in 1896, and in his varied career since that date he has been instrumental in solving many railroad track and industrial problems. Immediately after graduation, Mr. Strong became interested in railway and industrial matters, especially relating to the design and manufacture of special trackwork, and has since been continuously active in this field. After having held various subordinate positions up to 1912, he was at that time made vice-president and general manager of the Ramapo Iron Works, predecessors of the Ramapo Ajax Corporation. When the latter company was organized in 1922, Mr. Strong was elected president and has since directed its policy of expansion and consolidation of plants. During the World War, as chairman of a

J. B. Strong

committee of switch and frog manufacturers (members of the Manganese Track Society), he acted in an advisory capacity on standards for trackwork to the director general of railways. Mr. Strong participated in the organization of the Manganese Track Society in 1913, and has been active in its affairs since that time, having served as its chairman from 1927 to 1931. He has also been an active member of the American Society of Civil Engineers since 1904; of the American Society for Testing Materials since 1917; and of the American Railway Engineering Association since 1914. In the last named organization he has been particularly active, as a member of the Track committee since 1915, in the preparation of standard designs for special trackwork.

OBITUARY

Henry A. Wahlert, who retired in 1932 as representative at St. Louis, Mo., of the Westinghouse Air Brake Company, died at his home in St. Louis on January 7. Mr. Wahlert was born in 1860 at Amsterdam, Holland. He served an apprenticeship at the Missouri Pacific shops and was later employed by the Terminal Railroad Association. In 1890 he became assistant superintendent of the American Brake Company of St. Louis, a subsidiary of the Westinghouse Air Brake Company. He was then for a number of years air brake instructor for the Texas & Pacific and the International Great Northern and from 1912 to 1932 had served as representative of the Westinghouse Air Brake Company and the American Brake Company.

Stanley Hert Fields, vice-president of the Koppers Products Company, Pittsburgh, Pa., who was well known in the

Continued on next left-hand page

creosote industry, died on January 24, at his home in Pittsburgh, after a long illness. Mr. Fields was born on January 8, 1883, at Terre Haute, Ind. He was graduated from the Bloomfield, Ind., high school and entered the employ of the American Creosoting Company in 1905. In 1914, his uncle, the late A. T. Hert, president of the American Creosoting Company, helped organize the American Tar Products Company at Chicago, and Mr. Fields

Johnston Studios

Stanley Hert Fields

became vice-president of that company. In 1925 the company was moved to Pittsburgh and later became the Koppers Products Company, a division of the Koppers Company. With the change, Mr. Fields became vice-president of the Koppers Products Company, a division of the Koppers Products Company, which position he held until his death.

Harry Daniels, manager of the railroad department of the West Disinfecting Company, who died on January 19 at Evanston, Ill., of bronchial pneumonia, was born in Boston, Mass., in 1873, and started his railroad career at the age of 14 with the Concord & Montreal, now a part of the Boston & Maine. Later, he entered

Harry Daniels

the employ of the New York, New Haven & Hartford occupying various positions until 1908, when he left the railroad to enter the employ of the West Disinfecting Company as a salesman. In 1918, he was appointed manager of railroad sales for the United States and Canada, which position he held until his death.

Equipment and Supplies

Illinois Central Program Under Way

The Illinois Central, which has borrowed $3,000,000 from the PWA for repairs to equipment, has started its program. During the 10 months from January 1, 141 locomotives and 4,637 freight cars, including box, automobile and coal cars, will be repaired, while during the period from February to June 56 passenger cars, including baggage, coaches, parlor cars and dining cars, will be repaired. At the same time, 52 of these cars will be air-conditioned.

FREIGHT CARS

THE PACIFIC FRUIT EXPRESS will enter the market soon for 3,000 refrigerator cars.

THE CORNWALL RAILROAD is inquiring for 20 ore cars of 70 tons' capacity.

THE LEHIGH VALLEY, subject to approval of the Interstate Commerce Commission, is negotiating a P.W.A. loan of $1,755,000, to finance the building of 250 coal cars to be constructed with new materials and 750 coal cars to be constructed with new and second-hand materials.

THE ERIE has applied to the Interstate Commerce Commission for authority to issue $2,200,000 of equipment trust certificates to be delivered to the Public Works Administration for a loan with which to finance the acquisition of 500 box cars and 300 automobile cars.

PASSENGER CARS

THE CHICAGO, BURLINGTON & QUINCY has placed an order with the Edward G. Budd Manufacturing Company for two 7-car streamlined Diesel-electric trains, which will be placed in day service between Chicago and the Twin Cities in June or July to replace the present 3-car Twin Zephyrs, which will be transferred to another territory. These stainless steel cars will be 10 ft. wide, as compared with the 9 ft. 1 in. of the Twin Zephyrs. They will include a dining car, a cocktail lounge, a parlor car, an observation car, and coaches, and will have a capacity for 200 persons, as compared with 72 of the Twin Zephyrs.

IRON AND STEEL

THE CHICAGO & NORTH WESTERN has ordered 35,000 tons of rail from the Carnegie-Illinois Steel Company.

MACHINERY AND TOOLS

THE DELAWARE, LACKAWANNA & WESTERN is inquiring for four large shop tools. These include a milling machine, hydraulic press, a milling and boring machine and a shaper.

Financial

CHICAGO & NORTH WESTERN.—*Abandonment.*—Charles P. Megan, trustee, has applied to the Interstate Commerce Commission for authority to abandon 26.752 miles of branch line in Oconto, Shawano, and Waupaca counties, Wis.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Interest Payments.*—The federal district court at Chicago, on January 21, authorized trustees of the Milwaukee to pay holders of the general mortgage bonds $1,984,085 in interest, representing two-thirds of the semi-annual interest due July 1, 1935, on coupon bonds and quarterly interest due July 1, 1935, and October 1, 1935, on registered bonds. The court also authorized payment of 20 per cent of the principal amount of equipment trust certificates, Series A, C, D, E, F, G, H, J and K, which matured in 1935, the payment totaling $682,000. In another order, the court authorized payment of interest due January 1, 1936, and interest that will be due semi-annually hereafter on the Milwaukee's $2,291,000 PWA loan. A fourth order authorized trustees to accept interest at the rate of three per cent in lieu of six per cent for a period of six months to January 1, 1936, on $90,000 of bonds of the Priest Rapids Irrigation district.

CHICAGO, ROCK ISLAND & PACIFIC.—*Reorganization.*—Counsel for the Rock Island on January 23 asked the federal district court at Chicago to extend the deadline to February 27 for the filing of a plan of reorganization, contending that the uncertain constitutionality of New Deal legislation makes it impossible to present a reorganization plan at this time. The operating loss of the road for 1935 was about $1,000,000, while the Railway Retirement Act will cost the road $1,435,000 a year, the unemployment insurance provision of the social security act about $410,000 a year and the increase in fuel prices as a result of the Guffey Coal Act about $150,000 a year. The uncertainty surrounding these acts, it was contended, makes it impossible to prepare a reorganization plan that will provide for all contingencies. Judge James H. Wilkerson took the motion under advisement.

ERIE.—*P.W.A. Loan.*—This road has applied to the Interstate Commerce Commission for authority to issue $2,200,000 of equipment trust certificates to be delivered to the Public Works Administration for a loan with which to finance the acquisition of 500 box cars and 300 automobile cars.

GRAND TRUNK WESTERN.—*Trackage Rights.*—The Interstate Commerce Commission has authorized this company to operate under trackage rights over that part of the line of the Ann Arbor between Owosso Junction, Mich., and Ashley, 20.5 miles.

LEHIGH VALLEY.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume obligation and liability in

Continued on next left-hand page

respect of $1,755,000 of 4 per cent equipment trust certificates to be issued to the Public Works Administration in connection with the financing of 250 coal cars to be constructed with new materials and 750 coal cars to be constructed with new and second-hand materials.

MAINE CENTRAL.—*Securities.*—The Interstate Commerce Commission has authorized this company to issue $2,000,000 of 6 per cent secured bonds, first series, and $1,000,000 of 6 per cent secured bonds, second series, in lieu of a like amount of 6 per cent collateral trust bonds heretofore authorized. The Commission has also authorized this company to issue $12,424,000 of first mortgage and collateral 4 per cent bonds, series A, due 1945, and $10,000,000 of general mortgage 4½ per cent, Series A, bonds, due 1960—not exceeding $10,000,000 of the first mortgage bonds and all or any part of the general mortgage bonds to be exchanged for maturing first and refunding mortgage bonds. The sale of any of the first mortgage bonds not so exchanged is authorized at not less than 98⅜, the company having arranged to sell the bonds not so exchanged to bankers at 98½ plus a reimbursement which makes the net price about 98⅜ and brings the average annual cost of the proceeds to approximately 4.2 per cent.

NEW YORK CENTRAL.—*PWA Loans.*—The Interstate Commerce Commission has authorized this company to borrow $2,593,000 from the Public Works Administration for the purchase and application of new rail and other track materials.

NEW YORK CENTRAL.—*R.F.C. Loan.*—This company has applied to the Reconstruction Finance Corporation and the Interstate Commerce Commission for an extension to July 1, 1941, of the $11,899,000 remaining of its R.F.C. loans after $15,600,000 was paid in December. The company also proposed a substitution of a reduced amount of collateral.

PENNSYLVANIA.—*Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell $40,000,000 of general mortgage 3¾ per cent bonds, Series C, due April 1, 1970, to be used, together with treasury funds to the extent required, to redeem on May 1 at 105 and accrued interest the company's secured 5 per cent bonds, due November 1, 1964, outstanding in the amount of $50,000,000. The bonds had been sold to Kuhn, Loeb & Co., at 96¼ and offered to the public at 98¼.

ST. LOUIS SOUTHWESTERN.—*Trustee.*—The Interstate Commerce Commission has ratified the appointment of Berryman Henwood as trustee of this company and its subsidiaries.

WABASH.—*Receivership.*—The federal court at St. Louis, Mo., on January 23, authorized receivers for the Wabash to negotiate an agreement with holders of its equipment trust certificates for the payment this year of the installment due in 1933, and payment next year of the installment due in 1934. It is also proposed that payments due in 1936 and in 1937 be made in 1939 and 1940, respectively. The largest holders of the certificates, insurance companies and financial institutions, favor the plan.

WEST RIVER.—*Abandonment.*—The Interstate Commerce Commission has authorized this company and James G. Ashley, lessee, to abandon as to interstate and foreign commerce the entire line which extends from South Londonderry, Vt., southeasterly to Brattleboro, 36 miles.

Average Prices of Stocks and of Bonds

	Jan. 28	Last week	Last year
Average price of 20 representative railway stocks..	46.14	43.78	33.52
Average price of 20 representative railway bonds..	79.63	78.78	76.03

Dividends Declared

Erie & Pittsburgh.—7 Per Cent Guaranteed, 87½c, quarterly, payable March 10 to holders of record February 29; Guaranteed Betterment, 80c, quarterly, payable March 1 to holders of record February 29.

Norfolk & Western.—$2.00, quarterly; Extra, $2.00, both payable March 19 to holders of record February 29.

Pittsburgh, Fort Wayne & Chicago.—$1.75, quarterly, payable April 1 to holders of record March 10; 7 Per Cent Preferred, $1.75, quarterly, payable April 7 to holders of record March 10.

Reading.—First Preferred, 50c, quarterly, payable March 12 to holders of record February 20; Second Preferred, 50c, quarterly, payable April 9 to holders of record March 19.

Construction

CHICAGO & NORTH WESTERN.—A contract has been awarded to Foley Brothers, Inc., St. Paul, Minn., for the construction of a grade separation project at Kenosha, Wis., at a cost of $336,000. This work will involve the elevation of the company's tracks between Sixtieth and Sixty-Eighth streets, the construction of street subways at Sixty-Third and Sixty-Fifth streets, and the construction of a pedestrian subway at Sixty-First street.

DELAWARE, LACKAWANNA & WESTERN-ERIE.—These companies have been authorized by the New York Public Service Commission to do certain work in connection with the elimination of grade crossings in Binghamton, N. Y. The work to be performed by the railroads is to be done at actual cost by direct employment of labor and purchase of materials. The Erie is authorized to construct and remove temporary detour tracks, make changes in its tracks and signal system and construct and remove falsework for temporary operation, raise the superstructure of Chenango river bridge and raise the superstructure of Front street bridge at a cost not to exceed $313,530. The Delaware, Lackawanna & Western is authorized to do similar work in connection with the elimination of its crossings at a cost of not more than $276,226.

SOUTHERN.—A contract has been awarded to the Ross and White Company, Chicago, for the construction at Stearns, Ky., of a 300-ton capacity, two-track, fireproof, structural steel locomotive coaling and sanding plant with automatic electrically operated elevating equipment. The contract price is $25,000.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

A. W. Lavidge, auditor of expenditures of the Chicago, Burlington & Quincy, has been appointed auditor of freight accounts, with headquarters as before at Chicago, to succeed **H. C. Holzbach,** whose appointment as assistant freight traffic manager was noted in the *Railway Age* of January 11. **F. C. Kersten,** auditor of miscellaneous accounts, has been appointed auditor of expenditures to succeed Mr. Lavidge, and the office of auditor of miscellaneous accounts is merged with that of auditor of expenditures. **Carl A. Bick,** chief clerk to the auditor of miscellaneous accounts, has been appointed assistant auditor of expenditures.

Leonard C. Groom, acting administrator of the Land and Property department of the Canadian National, has been appointed administrator, with headquarters at Montreal, Que. Mr. Groom was born at Guelph, Ont., on November 8, 1884, where he was graduated from the public and high schools. He entered railway service as a clerk in the land department

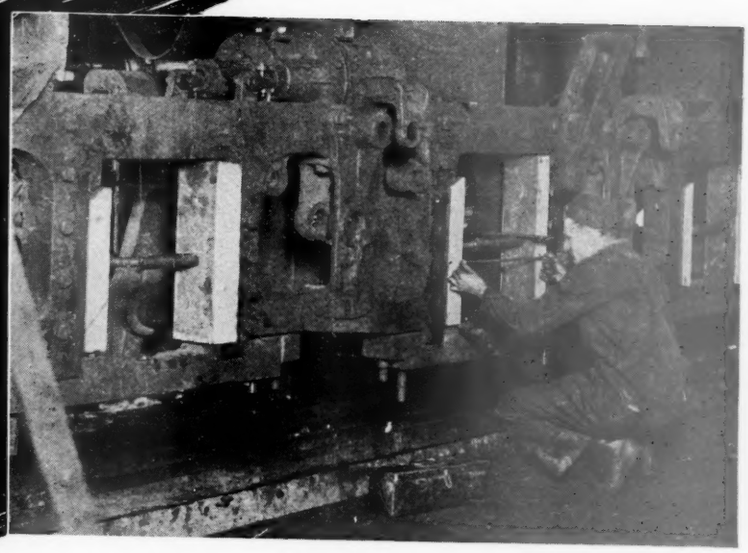
L. C. Groom

of the Canadian Northern at Toronto in 1908 and the following year was appointed chief clerk. In 1919 he became auditor in the same department at Toronto, including the auditorship of several subsidiary companies. After the establishment of the Canadian National's headquarters at Montreal, Mr. Groom was appointed auditor, land and town sites, in 1923, and was appointed acting administrator Land and Property department in 1933, the position he held until his recent appointment.

Guernsey Orcutt, assistant general counsel of the Pennsylvania at Pittsburgh, Pa., has been appointed general attorney, with headquarters at Chicago, to succeed **James Stilwell,** assistant general counsel, whose death on January 4 was noted in the *Railway Age* of January 11. **Arthur Van Meter,** assistant general solicitor at Phil-

Continued on next left-hand page

Prevent Destructive Pounds



-And Reduce Repair Costs

SHOES and Wedges made from HUNT-SPILLER *Air Furnace* GUN IRON offer big savings in locomotive maintenance costs.

Their wear-resisting qualities insure long service, less frequent wedge adjustments and prevention of destructive driving box pounds which shorten the service life of many locomotive parts.

Application of HUNT-SPILLER *Air Furnace* GUN IRON Shoes and Wedges on your locomotives will prove to be an important factor in the reduction of maintenance costs.

HSGI
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing for Cylinders and Valves
(Duplex Springs for Above Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

HUNT-SPILLER MFG. CORPORATION
J. G. Platt Pres. & Gen. Mgr. / V. W. Ellet Vice-President

Office & Works
383 Dorchester Ave. South Boston, Mass.
Canadian Representative: Joseph Robb & Co., Ltd., 5575 Cote, St. Paul Rd., Montreal, P. Q.
Export Agent for Latin America:
International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace

adelphia, Pa., has been appointed assistant general counsel at Pittsburgh, to replace Mr. Orcutt.

Mr. Orcutt was born at Chamberlain, S. D., in April, 1888, and was graduated from Beloit college in 1910 and from the Chicago Kent College of Law in June, 1913. After being admitted to the bar in Illinois in that year, Mr. Orcutt became

Guernsey Orcutt

connected with the legal firm of Loesch, Scofield & Loesch at Chicago. During the World War he served as a pilot in the air service of the United States Army, and following its close he resumed his connection with the same law firm. In 1919 Mr. Orcutt joined the legal staff of the Pennsylvania as assistant general solicitor at Pittsburgh, later being advanced to assistant general counsel, which position he was holding at the time of his recent appointment.

OPERATING

J. B. Doles, trainmaster on the Union Pacific, with headquarters at Nampa, Idaho, has been transferred with the same headquarters, to replace **R. E. Titus,** whose appointment as assistant superintendent, with headquarters at Pocatello, Idaho, was noted in the *Railway Age* of January 11.

F. W. Okie, trainmaster for the Southern at Oakdale, Tenn., has been transferred in the same capacity to Birmingham, Ala., succeeding **C. W. Pates,** who has been transferred to Huntingburg, Ind., to succeed **B. F. Harris.** Mr. Harris has been transferred to Danville, Ky., succeeding **H. B. Griffith** and **D. W. Brosnan** has been appointed trainmaster at Oakdale, Tenn., succeeding Mr. Okie.

Fred C. Paulsen, assistant superintendent of the Central district of the Union Pacific, who has been promoted to superintendent of the same district, with headquarters as before at Pocatello, Idaho, as was announced in the *Railway Age* of January 4, was born at Omaha, Neb. He entered the service of the Union Pacific in May, 1903, in the mechanical department at Omaha, later being transferred to the engineering department, where he served as a rodman, instrumentman, draftsman, assistant engineer, office engineer and division engineer. He also served as roadmaster and as an accountant. In 1926 Mr. Paulsen was transferred to the operating department as assistant superintendent, which position he held until his recent appointment.

Clark Hungerford, superintendent for the Southern at Alexandria, Va., has been appointed superintendent of the Birmingham division of the Southern and the Northern Alabama, with headquarters at Birmingham, Ala., succeeding **J. W. Payne,** who has been appointed superintendent of the Alabama Great Southern, the New Orleans & Northeastern and the Woodstock & Blockton, at Birmingham, succeeding **J. G. Clements.** Mr. Clements has been appointed superintendent of the Harriman & Northeastern, with headquarters at Harriman, Tenn., succeeding **T. M. Rodes,** retired.

TRAFFIC

H. H. Clapp has been appointed traveling freight agent for the Virginian, with headquarters at Charlotte, N. C.

ENGINEERING AND SIGNALING

W. E. Heimerdinger, roadmaster on the Chicago, Rock Island & Pacific at Haileyville, Okla., has been appointed division engineer of the Cedar Rapids-Dakota division, with headquarters at Cedar Rapids, Iowa, succeeding **F. Nugent,** who has been assigned to other duties.

R. W. Riser, supervisor of track of the Maryland division of the Pennsylvania at Wilmington, Del., has been appointed division engineer of the Renovo division at Renovo, Pa. **C. F. Trowbridge,** division engineer of the Renovo division at Erie, Pa., has been transferred in the same capacity to the Philadelphia Terminal division at Philadelphia, Pa.

H. N. Anderson, assistant engineer on the Pittsburgh West End division of the Baltimore & Ohio, with headquarters at Pittsburgh, Pa., has been appointed division engineer of the New York division, with headquarters at Tompkinsville, S. I., succeeding **J. L. Suesserott,** whose death on November 14 was announced in the *Railway Age* of November 23. **W. E. Kearfoot,** assistant division engineer on the Pittsburgh East End division at Connellsville, Pa., has been appointed assistant engineer at Pittsburgh, to succeed Mr. Anderson, and **H. A. Lynch,** track supervisor at Wheeling, W. Va., has been promoted to assistant division engineer at Connellsville, to succeed Mr. Kearfoot.

Do Managements Have Same View of Terminal Mergers as Labor Leaders?

"If, and to the extent that, the rail unions have altered their attitude toward pooled use of individual-company facilities, the change must no doubt be ascribed to their growing realization that the whole railroad position, and with it that of a million railroad employees, has become vulnerable to the competition of other transportation agencies as it has almost never been before.

"Assuming that the rail unions have seen this light, one cannot help wondering how fully the company executives on their side have seen it. There would seem to be no little parallel between the head of a company advantageously situated in respect to terminals, for example, who cannot see a common cause with a weaker carrier against the enemy at the gates, and a labor leader who supposes that outside competition is merely the employer's hard luck."

—From an Editorial in the Wall Street Journal.

MECHANICAL

D. W. Cross has been appointed superintendent of motive power of the Detroit & Toledo Shore Line, with headquarters at Toledo, Ohio, succeeding **J. F. Hazel.**

P. J. Norton, master mechanic on the Union Pacific, with headquarters at Pocatello, Idaho, has been appointed district superintendent, motive power and machinery, of the Central, Northwestern and Southwestern districts, with the same headquarters. **S. C. Smith** has been appointed master mechanic of the Central district at Pocatello, to succeed Mr. Norton.

PURCHASES AND STORES

Peter Young, general foreman of the Corwith (Ill.) reclamation plant of the Atchison, Topeka & Santa Fe, has been appointed general superintendent of reclamation at the same point, to succeed **R. K. Graham,** whose death on December 3 was noted in the *Railway Age* of December 14.

OBITUARY

Frank S. Chalmers, assistant auditor interline freight accounts of the New York Central, with headquarters at Cleveland, Ohio, died on January 12 of heart disease, after an illness of two months. Mr. Chalmers was 63 years old.

Charles D. Van Schaick, retired combustion expert for the New York Central, died at his home on Shippan Point, Stamford, Conn., January 19, after several weeks' illness. He was seventy-three years old. Mr. Van Schaick was a mechanical engineer. At the Rogers Locomotive Works, Philadelphia, he helped build the first locomotives for the West Shore. He helped build the motive power for the Mexican National Railways and spent some time in Mexico, demonstrating the power to the Mexican enginemen when it was put into service. Returning to New York, he entered the employ of the New York Central & Hudson River in 1890, and retired in 1932, since which time, however, he has done special work on assignment for the railroad.